



USAID
FROM THE AMERICAN PEOPLE

**HUMAN
RESOURCES
FOR HEALTH**

Federal Technical Vocational Education and Training (FTVET) Agency

Internal Quality Assurance and Improvement Standards for level V Anesthesia Program

First Edition
June 2015





USAID
FROM THE AMERICAN PEOPLE

**HUMAN
RESOURCES
FOR HEALTH**

Federal Technical Vocational Education and Training (FTVET) Agency

Internal Quality Assurance and Improvement Standards for Level V
Anesthesia Program

First Edition
June 2015

PREPARED BY

Fikirte Alemayehu, Federal Technical, Vocational Education and Training Agency (FTVET)
Asnake Ayechiluhim, Federal Technical, Vocational Education & Training Agency (FTVET)
Simiret Mersha, Federal Technical, Vocational Education and Training Agency (FTVET)
Demissie Gonfa, Oromia Technical, Vocational Education and Training (TVET)
Tesfaye Hagos, Tigray Technical, Vocational Education and Training (TVET)
Asseged Samuel, Federal Ministry of Health (FMoH)
Yohannes Molla, Strengthening Human Resources for Health Project, Jhpiego
Equlinet Misganaw, Strengthening Human Resources for Health Project, Jhpiego
Mintwab Gelagay, Strengthening Human Resources for Health Project, Jhpiego
Bekalu Assaminew, Strengthening Human Resources for Health Project, Jhpiego
Ermias Mergia, Strengthening Human Resources for Health Project, Jhpiego
Yewulsew Assaye, Strengthening Human Resources for Health Project, Jhpiego
Abebe Kebede, Strengthening Human Resources for Health Project, Jhpiego

ACKNOWLEDGMENT

This Internal Quality Assurance and Improvement Standard for Nursing TVET Program was developed by FTVET Agency Regional TVET Offices, Regional Health Bureau and Regional Health Science Colleges in collaboration with Strengthening Human Resources for Health Project. This document is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the Cooperative Agreement AID-663-A-12-00008. The contents are the responsibility of TEVET and Regional Health Bureau and do not necessarily reflect the views of USAID or the United States Government.

ABBREVIATIONS

CPD	Continuing Professional Development
DVD	Digital Video Disk
ESDP	Education Sector Development Program
EOS	Ethiopian Occupational Standard
ETQF	Ethiopian TVET Qualifications Framework
FMOH	Federal Ministry of Health
IDP	Institutional Development Plan
HEI	Higher Education Institution
HIV	Human Immunodeficiency Virus
ICT	Information Communication Technology
IT	Information Technology
IQA	Internal Quality Assurance
KSA	Knowledge, Skills, and Attitudes
NC	National Certification
RHB	Regional Health Bureau
RPL	Recognition of Prior Learning
SDL	Skills Development Laboratory
SOP	Standard Operating Procedure
OS	Occupational Standard
TEC	Technology Enhanced Class
TLTQF	TVET Leaders' and Trainers' Qualifications Framework
TTLM	Training and Teaching Learning Materials
TTQL	TVET Teachers' Qualification Level
TVET	Technical and Vocational Education and Training
USAID	United States Agency for International Development
VHS	Virtual Host Storage
WHO	World Health Organization

TABLE OF CONTENTS

Introduction.....	1
1. Program Goals And Outcomes.....	4
1.1 Program Goals/Aims	4
1.2 Participation In The Formulation Of The Program Goals And Outcomes.....	5
1.3 Institutional Autonomy And Academic Freedom.....	5
1.4 Educational And Training Outcomes.....	6
2. Governance, Leadership, And Administration	7
2.1 Governance Of The Program	7
2.2 Program Leadership Coordinator.....	7
2.3 Administrative Staff And Management	8
2.4 Budget And Resource Allocation.....	8
2.5 Interaction With The Health Sector	9
3. Educational And Training Resources	10
3.1 Traininghalls/Classroom.....	10
3.2 Office For Staff.....	11
3.3.Skills Development Center/Laboratory / Demonstration Room	11
3.4 Clinical Training Facilities/ Practice Sites/ Cooperative Training	12
3.5.It Facilities	14
3.6.Library.....	14
3.7.Trainees Amenities	15
3.8.Financial Resources	16
4. Trainers And Support Staff	17
4.1. Institutional Trainer.....	17
4.2. Clinical Trainer (Clinical Instructor/ Preceptor)	17
5. Trainees Enrollment And Support Services	19
5.1. Trainees Enrollment	19
5.2. Trainees Support Systems	20
5.3. Trainees Representation.....	21
6. Program Curriculum And Teaching, Training And Learning Materials.....	22
6.1. Program Curriculum Design And Development.....	22
6.2. Teaching-Training And Learning Materials (Ttlm).....	23
7. Outcome Based Training	25
7.1.Institutional Training	25
7.2. Cooperative Training.....	25
8. Continual Quality Assurance	28
9. Health Extension Service And Technology Transfer	30
9.1. Health Extension Service	30

9.2. Technology Transfer	30
Annex I. Anatomic Models/Medical Supplies And Consumables/Wall Charts	31
Annex 2: Anesthesia Practical Learning Sites Selection Criteria	32
Annex 3: Level V Anesthetic Nurse Program Learning Outcomes.....	34
Annex 4: Reference Books For Level V Anesthetic Nurse (Suggestions Not Limited To).....	35
Annex 5: Dictionaries And Encyclopedias.....	37
A. Program/ Subject-Specific Dictionaries	37
B. Program/ Subject-Specific Encyclopedias.....	37
Annex Iv. Indicative Sources Of Evidence For Verification Of Standards	39
References	43

INTRODUCTION

The revised National TVET Strategy (2008) reflects an important paradigm shift which places quality and relevance of TVET program as its major priority. According to the strategy there is a call for efforts to raise the quality of the Ethiopian workforce to international standards, to reverse the previous marginalization of industrial professions in the TVET system, and to put a substantial focus on building a culture of entrepreneurship and preparing people for self-employment.

The Education Sector Strategy Program (ESDP) III outlines a comprehensive development vision for the TVET sector and allocated significant amount of money to improve teaching – learning process, infrastructure and, strengthen quality assurance, and other quality improvement activities.

The Federal TVET Agency has shown the commitment to improve easy access and quality training in Technical and Vocational Education and Training. To end this, thus, high quality TVET educational and training programs that meet standard and performance in accordance with standards are imperative and the cornerstone of quality assurance.

Increased public expectation for quality and ethical health care is necessitating changes in what health professionals are taught and how they are taught. On the other hand, the increasing need to train more health workers, coupled with rapid expansion in medical knowledge, presents a serious challenge to the quality of education of health professionals, including anesthetists. Despite these challenges, many HEIs training health care providers do not have well-functioning quality systems that have been cascaded to the department level.

The ultimate goal of IQA is to have a culture of quality care that ensures that quality is a focus of all the activities of an institution at all levels and is incorporated into the everyday work of the whole institutional community. A robust and transparent quality assurance system conveys confidence in the quality of the provision of a TVET institution to its staff, to students, to employers, and to other stakeholders.

In response, TVET Agency, in collaboration with the Federal Ministry of Health (FMOH) and Jhpiego (under the Strengthening Human Resources for Health Project funded by the U.S. Agency for International Development [USAID]), has developed this quality improvement standards for the anesthesia level V program.

Standards are desirable practices in educating anesthetists, and which incorporating well-recognized and accepted principles of learning and institutional conditions for educational activities and are based on scientific evidence, best practice, experts opinion and judgment and National policies, strategies, guideline and legislation and therefore; there is a need for using and implementing of the standards.

USES OF STANDARDS

It is the opinion of TVET that the set of standards presented can be used nationally as a tool for quality assurance and improvement of level V anesthesia education. This could be done in different ways, such as:

1. For education institutions (Anesthesia programs, schools, Colleges)

- Serve as a mechanism for internal quality assurance and improvement and in nursing education (basis for internal evaluation and quality improvement)
 - ◆ Measuring their performance,
 - ◆ Identifying the gaps,
 - ◆ Identifying appropriate interventions to correct performance gaps
 - ◆ Implement interventions and continually measure their progress using standards

2. For regulatory bodies

- Serve as bases for accreditation process to ensure and improve the quality of nursing education
 - ◆ Self- assessment and evaluation,
 - ◆ External audit –including site visit ,
 - ◆ Feedback for institutions to correct error of facts and
 - ◆ Accreditation decision- to accredit and to sanction nursing program

3. Value added to the institution/ education

- Use and implementation of these standards is intended to add the following value for institutions Create system /mechanism for internal quality assurance, regulation and accountability
 - ◆ Became a powerful tool or advocacy and resource mobilization to fill their gaps
 - ◆ Attract the attention of policy makers and leaders to be involved and support
 - ◆ Create opportunity to implement scientific evidences and best practices
 - ◆ Create and facilitate quality to became regular, day-to-day and on-going function of the nursing education
 - ◆ Reinforce continual individual & organizational learning

DEFINITIONS

The following terms are used frequently in this guideline. Hence it is important to define them to enhance understanding of the document.

Areas are defined as broad components in the structure, process, and outcome of anesthesia education.

Sub-areas are defined as specific aspects of an area, corresponding to performance indicators.

Standards (one or more) are specified for each sub-area, using two levels of attainment, and each standard is given a specific number. The standards are structured in 10 areas and 37 sub-areas.

Basic standard means that the standard must be met by every anesthesia program/ unit and fulfilment demonstrated during evaluation of the program/ unit. *Basic standards are expressed by a “must.”*

Standard for quality improvement means that the standard is in accordance with international consensus about best practice for anesthesia program/ unit and basic anesthesia education. Fulfilment of or initiatives to meet some or all of such standards should be documented by anesthesia programs/ units. Fulfilment of these standards will vary with the stage of development of the anesthesia program/ unit, their resources, and educational policy. Even the most advanced programs/ units might not comply with all standards. *Standards for quality improvement are expressed by a “should.”*

Altogether, the document includes **237 basic standards** and **57 quality improvement standards**.

Annotations are used to clarify, amplify, or exemplify expressions in the standards. It should be strongly emphasized that the content of the annotations should not be seen as prescriptive for institutions. The annotations do not add new criteria or requirements. The listing of examples in annotations are in some cases exhaustive, in others not.

STRUCTURE OF STANDARDS

TVET has identified the following **09 areas** and **30 sub-areas** of operation, which will form the focus points for a quality audit model at program-level in Ethiopian Health science colleges. They are closely related to the focus areas the Agency has been using for the past couple of years. These areas are:

1. Program Goals and Outcomes
2. Governance, Leadership, and Administration
3. Educational Resources
4. Trainers and Support Staff
5. Trainees enrollment and Support Services
6. Program curriculum , Training , Teaching and Learning Materials
7. Outcome Based Training
8. Continual Quality Assurance
9. Health Extension service and technology transfer

I. PROGRAM GOALS AND OUTCOMES

I.1 PROGRAM GOALS/AIMS

Basic Standards

The Anesthesia program **must**:

- Define its program goals and make them known to its constituency (B 1.1.1)
- Ensure that the goal of the program is in line with, and supportive of, the vision and mission of the institutions and Technical Vocational Educational and Training (TVET)/ Regional Health Bureau(RHB) (B 1.1.2)
- Outline in its statement of program goals that the trained anesthetists are:
 - ◆ Competent at each level and capable of undertaking the role of level V anesthetists as defined by the Health Sector Ethiopian Occupational Standard (EOS) (B 1.1.3)
 - ◆ Prepared and ready for next level education (B 1.1.4)
 - ◆ Committed to lifelong learning (B 1.1.5)
- Ensure that the mission encompasses the needs of the community, the health care system, and other aspects of social accountability (B 1.1.6)

Annotations

Program goals/outcomes are general statements of what the program intends to accomplish; they describe learning outcomes and concepts in general terms. They should also be consistent with the mission of the program and institution.

Constituency would include the leadership, staff, and students of the program as well as other relevant stakeholders.

Lifelong learning is the professional responsibility to keep up to date in knowledge and skills through appraisal, audit, reflection, or recognized continuing professional development (CPD). CPD includes all activities that level V anesthetists undertake, formally and informally, to maintain, update, develop, and enhance their knowledge, skills, and attitudes in response to the needs of their patients.

Social accountability would include willingness and ability to respond to the needs of society, of clients, patients, and the health and health-related sectors and to contribute to the national and international developments in anesthesia by fostering competencies in health care, anesthesia education, and anesthesia research. This would be based on the program's own principles and in respect of the autonomy of Health Science College. Social accountability is sometimes used synonymously with social responsibility and social responsiveness. In matters outside its control, the anesthesia program would still demonstrate social accountability through advocacy and by explaining relationships and drawing attention to consequences of the policy.

I.2 PARTICIPATION IN THE FORMULATION OF THE PROGRAM GOALS AND OUTCOMES

Basic Standard

The Anesthesia program must:

- Ensure that its principal stakeholders participate in formulating program goals and outcomes (B 1.2.1)

Quality Improvement Standard

The Anesthesia program should:

- Ensure that the formulation of program goals and outcomes is based also on other relevant stakeholders (Q 1.2.1)

Annotations

Principal stakeholders include the trainees, College, Ministry of Education, professional associations, Ministry of Health, Regional Health Bureaus (RHB), Federal Technical Vocational and Educational Training (FTVET) Agency, Regional Technical Vocational and Educational Training, Education Strategic Center, and the public.

Other relevant stakeholders include community representatives, patient associations, and partners.

I.3 INSTITUTIONAL AUTONOMY AND ACADEMIC FREEDOM

Basic Standard

The Anesthesia program **must**:

- Have autonomy to implement policies for which its program staff and administration are responsible, especially regarding
 - ◆ Development and revision of the curriculum (B 1.3.1)
 - ◆ Use of the allocated resources necessary for implementation of the curriculum (B 1.3.2)
 - ◆ Institutional assessments, staff recruitment/selection and employment conditions (B 1.3.3)

Quality Improvement Standard

The Anesthesia program **should**:

- Ensure freedom for its trainer and trainees
 - ◆ In designing and addressing the actual curriculum (Q 1.3.1)
 - ◆ In exploring the use of new appropriate technology and disseminate the output (Q 1.3.2)

Annotations

Institutional autonomy would include appropriate independence from government and other counterparts (regional and local authorities, religious communities, private co-operations, the professional unions, and other interest groups) to be able to make decisions about key areas such as revision of curriculum, institutional assessments, staff recruitment/selection and employment conditions, and resource allocation.

Academic freedom would include appropriate freedom of expression and freedom of inquiry and promotion for trainers and trainees.

1.4 EDUCATIONAL AND TRAINING OUTCOMES

Basic standards

The Anesthesia program **must**:

- Have clearly defined educational and training outcomes that are in line with and supportive of the program goals (B 1.4.1)
- Define the intended educational and training outcomes that trainees should exhibit upon completion of training in relation to:
 - ◆ Their achievements at each level regarding knowledge, skills, and attitudes (KSA) (B 1.4.2)
 - ◆ Their commitment to knowledge, skills and attitude in lifelong learning (B 1.4.3)
 - ◆ The health needs of the community, the needs of the health care system, and other aspects of social accountability (B 1.4.4)
- Ensure appropriate trainees conduct (ethics) with respect to fellow trainees, trainers, other health care personnel, and patients and their relatives (B 1.4.5)
- Make the educational and training outcomes of the known to the trainees and trainers (B 1.4.6)

Quality Improvement Standards

The Anesthesia program **should**:

- Review and suggest the outcomes periodically in consultation with principal stakeholders to ensure that the educational and training outcomes are in line with the needs of the health sector and the society (Q 1.4.1)

Annotation

Education and training outcomes refers to statements of KSA that trainees are expected to possess and demonstrate at the end of each training completion.

Refer to annotations in 1.1 for *lifelong learning*

Refer to annotations in 1.2 for *principal stakeholders*.

2. GOVERNANCE, LEADERSHIP, AND ADMINISTRATION

2.1 GOVERNANCE OF THE PROGRAM

Basic Standards

The Anesthesia program **must**:

- Define its program structure and functions including its relationships within the institution (B 2.1.1)
- Ensure the program is part of Institutional Development Plan (IDP) (B 2.1.2)

Quality improvement standards

The Anesthesia program **should**:

- In its program structures, set out the committee structure and reflect representation from:
 - ◆ Trainers (Q 2.1.1)
 - ◆ Trainees(Q 2.1.2)
 - ◆ Principal stakeholders (Q 2.1.3)
- Ensure transparency of the work of governance and its decisions (through notice board, web information, disclosure of minutes, etc.) (Q 2.1.4)

Annotation

Governance means the act and/or the structure of governing the program. Governance is primarily concerned with participating in policy making process and implementing policy, the processes of establishing general institutional and program policies, and also with control of the implementation of the policies. The institutional and program policies would normally encompass decisions on the mission of the Level V anesthesia program, curriculum, staff recruitment and selection policy, and decisions on interaction and linkage with anesthesia practice and the health sector as well as other external relations.

IDP sometimes called strategic plan or long range plan, is document that guides the institutions achievement, growth and allocation of the resource.

Refer to annotations in 1.2 for *principal stakeholders*.

2.2 PROGRAM LEADERSHIP COORDINATOR

Basic Standards

The Anesthesia program **must**:

- Have a designated coordinator for each level trainer who has better performance, is at least TWO level higher than respective level and 1 years of experience in the related training area) (B 2.2.1)
- Describe the responsibilities of its leadership for definition and management of the level V Anesthesia educational and training program (B 2.2.2)

Quality improvement standards

The Anesthesia program **should**:

- Periodically evaluate its program leadership in relation to achievement of its program goals and intended educational and training outcomes (Q.2.2.1)

Annotation

Program leadership refers to the positions and persons within the governance and management structures being responsible for decisions on matters in education and training of the program and would include program coordinator, successors and other committees.

2.3 ADMINISTRATIVE STAFF AND MANAGEMENT

Basic standards

The Anesthesia program **must**:

- Have adequate support of administrative staff from the institution that are appropriate to:
 - ◆ Support implementation of its education & training program and related activities (B 2.3.1)
 - ◆ Ensure good management and resource deployment (B 2.3.2)

Quality Improvement standards

The Anesthesia program **should**:

- Formulate and implement an internal program for quality assurance of the management, including regular review (Q 2.3.1)

Annotations

Administrative staff in this document refers to the positions and persons within the governance and management structures being responsible for the administrative support to implementation of policies and plans and would depending on the organizational structure of the administration.

Management means the act and/or the structure concerned primarily with the implementation of the institutional and program policies including the economic and organizational implications, i.e., the actual allocation and use of resources within the anesthesia program.

2.4 BUDGET AND RESOURCE ALLOCATION

Basic standards

The Anesthesia program **must**:

- Have a clear line of responsibility and authority for resourcing the program, including a dedicated educational and training budget (B 2.4.1)
- Allocate and use the resources necessary for the implementation of the curriculum and distribute the educational and training resources in relation to educational and training needs (B 2.4.2)

- Ensure that the budget allocation matches with trainees enrollment (B 2.4.3)

Quality improvement standards

The Anesthesia program **should**:

- Have autonomy to direct/control the budget and resources in order to achieve its program goals and the intended educational outcomes of the curriculum (Q 2.4.1)
- Have a transparent system of responsibility and accountability in the allocation, distribution, and use of the budget and other resources (Q 2.4.2)
- In the distribution of the resources, take into account development in anesthesia sciences and health needs of the society (Q 2.4.3)

2.5 INTERACTION WITH THE HEALTH SECTOR

Basic standards

The Anesthesia program **must**:

- Have constructive interaction with the health and health-related sectors of society and government (B 2.5.1)
- Formalize its collaboration (entering into formal agreements, stating content and forms of collaboration, and/or establishing joint contact and coordination committees as well as joint projects), including engagement of trainer and trainees with partners in the health sector (B 2.5.2)

Quality improvement standard

The Anesthesia program **should**:

- Periodically review its interaction with the health and health-related sectors (Q 2.5.1)
- Interact with health and health-related sectors based on principles of mutual benefit and shared governance (Q 2.5.2)

Annotations

Constructive interaction would imply exchange of information, collaboration, and organizational initiatives that would facilitate education of level V anesthetists so as to equip them with the qualifications needed by society.

The health sector would include the health care delivery system, whether public or private, research institutions, and other anesthesia sectors.

The health-related sector would—depending on issues and local organization—include institutions and regulating bodies with implications for health promotion and disease prevention (e.g., with environmental, nutritional, and social responsibilities)

Mutual benefit would mean both parties in agreement gain value out of the interaction. For example, an anesthesia program sends students to a certain hospital for practice; in exchange, staff at the hospital are given educational opportunities at the same program/ unit.

Shared governance would mean working together to make decisions for the good of both parties involved.

3. EDUCATIONAL AND TRAINING RESOURCES

3.1 TRAINING HALLS/CLASSROOM

Basic standards

The Anesthesia program **must**:

- Have training halls/classrooms for group, tutorial, and seminar activities with adequate space (1.4m²/trainees for group/tutorial and 1.6m²/trainees for seminar) (B 3.1.1)
- Ensure that the rooms are equipped with:
 - ◆ Sufficient and comfortable chairs and tables (movable armchairs and/or chairs with tables) (B 3.1.2)
 - ◆ Clean projection wall/screen (B 3.1.3)
 - ◆ Writing board with different colors of marker and board cleaner (B 3.1.4)
- Ensure that the rooms are well-illuminated (words written in pencil can be read from any corner of the room, and screen-projected words, pictures, and videos seen clearly without reflection from every corner) (B 3.1.5)
- Ensure that the rooms have adequate ventilation (open windows and /or AC, fans) (B 3.1.6)
- Have functional toilets separate for males and females near the classroom (B 3.1.7)
- Have regular cleaning schedule and follow-up for the facility (B 3.1.8)
- Have a built-in overhead projector and/or LCD (liquid crystal display) with computer (B 3.1.9)
- Have a water source around /near the classroom (B 3.1.10)

Quality Improvement Standards

The Anesthesia program **should** have:

- A “smart” classroom (Q 3.1.1)
- Regular/scheduled facility inspection and maintenance services (Q 3.1.2)

Annotation

Smart classroom: A smart classroom is a traditional, lecture-style teaching space that has available technological equipment that can be used to aid and enhance instruction of a course. The traditional smart classroom is equipped with the basic technology that will enable trainees and/or teachers to connect their laptops to the video projector or to play a VHS (virtual host storage)/DVD (digital video disk) movie. The new standard TEC (technology-enhanced classroom) model includes:

- A DVD
- Document camera
- RCA video and audio input
- Laptop VGA (video graphics array) and audio input
- Network connectivity

- Amplifier and speakers
- High-powered projector (3,000 lumens)
- Permanent projector screen (powered or pull-down)

3.2 OFFICE FOR STAFF

Basic Standards

The Anesthesia Program **must have:**

- A program coordinator office equipped with:
 - ◆ Printer, scanner and photocopy machine (B 3.2.1)
 - ◆ Telephone (B 3.2.2)
 - ◆ Conference (meeting) table with chairs (B 3.2.3)
- An office for teaching and administration staffs with adequate space (2.0 m²/person) (B 3.2.4)
- The office must be equipped with:
 - ◆ Computers with Internet access for each teaching staff (B 3.2.5)
 - ◆ Chairs and tables with drawers (B 3.2.6)
 - ◆ File cabinet and bookshelf (B 3.2.7)
 - ◆ Nearby toilets, separate for males and females (1 toilet for 20 instructors) (B 3.2.8)

Quality improvement standards

The Anesthesia program **should have:**

- A regular maintenance schedule for office equipment (Q 3.2.1)

3.3. SKILLS DEVELOPMENT CENTER/LABORATORY / DEMONSTRATION ROOM

Basic Standards

The Anesthesia program **must:**

- Have a skills development center/laboratory (SDL) to practice clinical anesthesia procedures as airway management, regional and general anesthesia, pain management, basic and advanced cardiac life support (child and adult), and monitoring of a patient parameters and other essential skills in relevant biomedical sciences relevant to the practice of anesthesia. (B 3.3.1)
- Have SDL management guideline/policy (B 3.3.2)
- Ensure a learning environment that is safe for staff and students (B 3.3.3)
- Ensure that each the SDL/demonstration room has:
 - ◆ Adequate space for skill demonstration, practice, and discussion (2.2m²/student) (B 3.3.4)
 - ◆ An adequate (1:6 ratio) supply of functional anatomic models, simulators, and mannequins to learn essential competencies (see Annex I) (B 3.3.5)

- ◆ Adequate consumable medical supplies (see Annex I) (B 3.3.6)
- ◆ A dedicated office (B 3.3.7)
- ◆ Safety manuals, posted safety precautions, a fire extinguisher, an emergency shower, and infection prevention equipment (B 3.3.8)
- ◆ Uninterrupted water and power supply (B 3.3.9)
- ◆ An adequate number of movable chairs, tables for each station, a labeled shelf with locks, dust bins in all the stations, and storage (B 3.3.10)
- ◆ Audiovisual aids including video sets (B 3.3.11)
- ◆ Adequate illumination and ventilation (B 3.3.12)
- ◆ Adequate and up-to-date learning materials (reference books, checklists for all skills, standard operating procedures [SOPs], wall charts, posters, flow charts, and electronic learning resources) (B 3.3.13) (See Annexes I and III)
- ◆ A regular cleaning schedule and follow-up for the facility (B 3.3.14)

Quality Improvement Standards

The Anesthesia program **should**:

- Ensure that the skills lab is properly organized, and managed by a dedicated skills lab manager (Q 3.3.1)
- Be accessible for students' independent practice 24/7 (Q 3.3.2)
- Have a system for tracking all materials and equipment after each practice (Q 3.3.3)
- Have a regular maintenance schedule for the laboratory facility and equipment (Q 3.3.4)
- Employed standard patient (Q 3.3.5)

Annotation

A safe learning environment would include provision of necessary information; protection from harmful substances, specimens, and organisms; laboratory safety regulations; and safety equipment.

Standard Patient is a healthy individual or patient trained who is trained to simulate medical condition in standardized way

3.4 CLINICAL TRAINING FACILITIES/ PRACTICE SITES/ COOPERATIVE TRAINING

Basic Standards

The Anesthesia program **must**:

- Have Clinical practice guideline (B 3.4.1)
- Define appropriate clinical/practicum sites selection criteria that encompass but are not limited to:
 - ◆ Having an adequate client caseload and case mix as per the core competencies (B 3.4.2)

- ◆ Having sufficient staff who are willing to be preceptors (B 3.4.3)
- ◆ A range of clinical practice sites (primary, secondary, tertiary levels) (B 3.4.4)
- ◆ A practice standard of practical training facilities that matches what is taught in the program/ unit (B 3.4.5)
- Have a sufficient number and variety of practicum sites for anesthesia practice experiences, including sites for practice on:
 - ◆ Preoperative anesthetic assessment (B 3.4.6)
 - ◆ Anesthesia induction (B 3.4.7)
 - ◆ Airway management (B 3.4.8)
 - ◆ Pain management (B 3.4.9)
 - ◆ Intraoperative maintenance of anesthesia (B 3.4.10)
 - ◆ Monitoring of anesthetized patients (B 3.4.11)
 - ◆ Emergence of anesthesia care (B 3.4.12)
 - ◆ Critical care services (B 3.4.13)
 - ◆ Checking and maintenance of anesthesia equipment (B 3.4.14)
 - ◆ Resuscitation of a cardiac arrest patient (B 3.4.15)
 - ◆ Infection prevention (B 3.4.16)
- Ensure the availability of necessary resources for giving the trainees adequate clinical experience, including national service delivery guidelines, personal protective equipment, learning tools (checklists, log books, SOPs), and other essential equipment (B 3.4.17)
- Ensure easy accessibility of clinical practice sites including transport facilities to distant sites (B 3.4.18)

Quality Improvement Standards

The Anesthesia program **should**:

- Periodically assess the quality of sites and preceptors in light of achieving curricular needs and identify potential additional sites when needed (Q 3.4.1)
- Discontinue relationships with the sites that do not maintain the preset quality criteria and are unable to do so after implementation of a remediation plan (Q 3.4.2)
- Ensure that the clinical practice sites have discussion rooms (Q 3.4.3)
- Ensure that the clinical practice site have a mini-library with essential reference books and guidelines in the clinical practice site (Q 3.4.4)
- Use accredited clinical practice sites (Q 3.4.5)

3.5. IT FACILITIES

Basic Standards

The Anesthesia program **must**:

- Ensure trainees have access to computers with Internet connectivity; one computer for three trainees (B 3.5.1)
- Have electronic educational resources available (B 3.5.2)
- Formulate and implement a policy that addresses effective use and evaluation of appropriate information and communication technology (ICT) for education (B 3.5.3)

Quality Improvement Standards

The Anesthesia program **should**:

- Have subscriptions to educational websites/resources for staff and students' use (Q 3.5.1)
- Ensure that the IT center is accessible for trainees independent learning (outside of working hours) (Q 3.5.2)
- Have regular/scheduled IT facility inspection and maintenance services (Q 3.5.3)
- Establish e-learning (Q 3.5.4)

3.6. LIBRARY

Basic Standard

The Anesthesia program **must**

- Have access to a library with:
 - ◆ A qualified librarian, an assistant, catalogue clerks, and other subordinates (B 3.6.1)
 - ◆ A seating capacity to accommodate 25% of the total number of trainees at a time (B 3.6.2)
 - ◆ A separate reading room for instructors (B 3.6.3)
 - ◆ A catalogue system (B 3.6.4)
 - ◆ Adequate illumination and ventilation, and be free from sound pollution (B 3.6.5)
 - ◆ A nearby functional toilet with a water supply (B 3.6.6)
 - ◆ Signs posted for appropriate behaviors (silence, no food and drinks, no smoking) (B 3.6.7)
 - ◆ A schedule showing library working hours posted at the entry point (B 3.6.8)
 - ◆ An adequate supply of recent textbooks (in a ratio of 1:5 students) and reference materials (in a ratio of 1:15 students) relevant to the courses taught (B 3.6.9) (See Annex II)
 - ◆ Access to up-to-date and peer-reviewed journals (local and international) (B 3.6.10)
 - ◆ Copies of relevant and updated national service delivery guidelines and protocols on priority health issues in the country (B 3.6.11) (See Annex III)

Quality Improvement Standards

The Anesthesia program **should:**

- Have an automated library system (system for recording and cataloging material and for ensuring the security of materials) (Q 3.6.1)
- Have a system to take feedback from users and update its services on a regular basis (Q 3.6.2)
- Have 24/7 access to library services (Q 3.6.3)

Annotations

Catalogue system is a search and discovery tool that provides results from the library's online and print collections in a single search. It includes titles of printed books, journals, manuscripts, letters, and other material available at the library as well as links to the full text of millions of journal articles and, digital images of graphics/illustrations, and manuscripts.

Automated library system: Library automation is the application of ICTs to library operations and services. The functions that may be automated are any or all of the following: acquisition, cataloging, public access, indexing and abstracting, circulation, serials management, and reference.

3.7. TRAINEES AMENITIES

Basic Standards

The Anesthesia program **must:**

- Have an entity/unit responsible for trainees support, addressing academic, social, financial and personal needs (B 3.7.1)
- Ensure safe and adequate trainees facilities including lounges, and sports and recreational facilities (B 3.7.2)
- Allocate resources (budget, facilities, and qualified personnel) for trainees support programs (B 3.7.3)
- Ensure the availability of a trainees clinic, counseling, and social support units at institution level (B 3.7.4)
- Ensure that the different facilities on campus are accessible to trainees with disabilities (B 3.7.5)

Quality Improvement Standards

The Anesthesia program **should:**

- Have regular/scheduled facility inspection and maintenance services (Q 3.7.1)
- Have a trainees complex providing a variety of services (Q 3.7.2)
- Ensure safe and adequate student housing and catering service (Q 3.7.3)

Annotation

Addressing social, financial, and personal needs would mean support in relation to social and personal problems and events, health problems, and financial matters, and would include

access to health clinics, immunization programs, and health/disability insurance as well as financial aid services in the form of bursaries, scholarships, and loans.

3.8. FINANCIAL RESOURCES

Basic Standards

The Anesthesia program **must**:

- Deploy financial resources to:
 - ◆ Support all aspects of the goals and strategic plan and ensure stability in the delivery of the program (B 3.8.1)
 - ◆ Allow effective faculty and support staff recruitment, retention, and development (B 3.8.2)
 - ◆ Maintain and improve physical facilities, equipment, and other educational and research resources (B 3.8.3)
 - ◆ Measure, record, analyze, document, and distribute assessment and evaluation activities (B 3.8.4)
 - ◆ Ensure experiential learning and preceptors support for smooth curriculum implementation (B 3.8.5)

Quality Improvement Standards

The Anesthesia program **should**:

- Develop and maintain a broad base of financial support, including a program to acquire extracurricular funds through endowment income, consultancy services, grants, provision of continuing education, and other fundraising mechanisms (Q 3.8.1)
- Secure a budget for innovation in education, research, and other scholarly activities (Q 3.8.2)
- Allocate an uncommitted reserve of finance/budget to address unexpected issues (Q 3.8.3)

4. TRAINERS AND SUPPORT STAFF

4.1. INSTITUTIONAL TRAINER

The Anesthesia program **must**:

- Ensure implementation of trainer recruitment and development according to TVET Leaders' and Trainers' Qualifications Framework (TLTQF) / RHSCs legislation (B 4.1.1)
- Implement a ratio of trainers to trainees of 1:25 for institutional training (B 4.1.2)
- Have a system for orienting and mentoring of new trainers (B 4.1.3)
- Ensure that the number of trainers, assigned for skills labs and cooperative training is in line with the specific profession requirements and local context (B 4.1.4)
- Require A-level and above trainer for the training (B 4.1.5)
- Ensure the trainers carryout the following role and responsibilities
 - ◆ Facilitator, TTLM and curriculum developer, advocator, counselor, coordinator, institutional Assessor, supervisor (B 4.1.6)
- Ensure Trainers implement Health sector extension service and technology transfer (B 4.1.7)
- Implement a ratio of full-time and part-time teaching trainers (80% and 20% respectively) (B 4.1.8)
- Ensure that availability of contract document for each part-time trainer (B 4.1.9)
- Assign a trainer for skills lab assistant with level V and above anesthesia qualification/ profession (B 4.1.10)
- Ensure that each trainers has technical update in the field of instruction (30CEU per year) (B 4.1.11)
- Have a trainer performance evaluation system
 - ◆ Carried out regularly using standard format (B 4.1.12)
 - ◆ Performed by peers, students and department heads (B 4.1.13)
 - ◆ Is specific and timely provision of constructive feedback (B 4.1.14)
 - ◆ Has document result to be used for decision making and staff development (B 4.1.15)

Quality improvement

The Anesthesia program **should**:

- Formulate and implement performance based incentive for trainers (Q 4.1.1)
- Develop and implement trainers retention policy (Q 4.1.2)

4.2. CLINICAL TRAINER (CLINICAL INSTRUCTOR/ PRECEPTOR)

Basic standards

The Anesthesia program **must:**

- Use guideline/criteria for selection of Clinical Trainer (Clinical instructor/ preceptor) who are working at anesthesia practice sites and providing service (B 4.2.1)
- Ensure that the Clinical Trainer (Clinical instructor/ preceptor)
 - ◆ Undertake occupational assessment and being competent to the respective level (B 4.2.2)
 - ◆ Have methodology training for clinical teaching (B 4.2.3)
 - ◆ Are at least equivalent to the level of training with minimum of 2 years of service in the specific area (B 4.2.4)
 - ◆ Have the minimum qualification of A-level Trainer (B 4.2.5)
- Ensure that the Clinical Trainer (Clinical instructor/ preceptor-to-trainees ratio for the practice experience is sufficient (1: 20) to provide individualized instruction, guidance, and supervision (B 4.2.6)

Quality Improvement standards

The Anesthesia program **should:**

- Establish a mechanism to support clinical trainer's CPD as educators and practitioners in line with their responsibilities in the program (Q 4.2.1)
- Implement incentive and recognition mechanisms for the preceptors (Q 4.2.2)

Annotations

TVET Trainer is defined as an instructor, developer, facilitator or supervisor who is qualified to facilitate the activities and programs of a particular occupation.

C-level trainer is a holder of a National Certification (NC) of at least Level I up to III,IV,V and a Trainers Methodology Certification C (TMC) to prove that he / she is competent to deliver a training program.

B-level trainer is who possesses TVET Trainers Qualification (TTQL) B and NC Level-I up to IV and also TMB.

A level trainer is who possesses TVET Trainers Qualification Level (TTQL) A and NC Level I up to V and also TMA.

Clinical Trainer (Clinical instructor/ preceptor refers to qualified anesthetists and/or clinicians who are working on full-time basis in the respective experiential practice sites and have signed a formal agreement with the education and training institutions to coach the students.

Qualifications of trainer would mean appropriateness of the high-level trainings relevant to the Unit of Competency described in the EOS.

Cooperative training refers to an instructional delivery of education and training that combines health institutions and school training based on a curriculum collaboratively designed and implemented by health institution and respective institutions.

5. TRAINEES ENROLLMENT AND SUPPORT SERVICES

5.1. TRAINEES ENROLLMENT

Basic standards

The Anesthesia program **must**:

- Ensure that the enrollment policy/guideline is in line with the national and regional enrollment decision and cut off point (B 5.1.1)
- Have a written enrollment policy/guideline for trainees that specifies:
 - ◆ Rationale, process of trainees enrollment and minimum acceptance criteria/enrollment requirement according to the EOS (B 5.1.12)
 - ◆ Existence of an entity responsible for trainees selection and admission that ensures transparency and fairness (B 5.1.2)
 - ◆ The process and criteria for enrollment of students with special needs (B 5.1.4)
 - ◆ The process for transfer of trainees from other institutions (B 5.1.5)
 - ◆ The size of trainees intake in relation to its capacity and resource at all stages of the program (B 5.1.6)
 - ◆ Be represented on the screening and selection committee/entity of the institution (B 5.1.7)
 - ◆ A system for appeal for enrollment decisions (B 5.1.8)
- Ensure that trainees enrollment process is transparent, free from discrimination, and in accordance with institutional policies and all applicable codes of laws (B 5.1.9)
- Ensure that trainees have a trainees handbook that clearly indicates
 - ◆ Enrollment policy/guideline (B 5.1.10)
 - ◆ Trainees support systems and how to access them (B 5.1.11)
 - ◆ Rights, responsibilities, and obligations of trainees in the institution and cooperating training site (B 5.1.12)
 - ◆ Appeal system (B 5.1.13)
 - ◆ Program/ unit profile: brief history, organizational structure, etc. (B 5.1.14)

Quality improvement standards

The Anesthesia program **should**:

- State the relationship between trainees selection, the mission of the educational and

training program, and desired qualities of training completers (Q 5.1.1)

- Have a system for student mobility exchange and transfer (Q 5.1.2)
- Periodically review the enrollment policy/guideline and trainees intake in line with academic success of the trainees and the needs of the society (Q 5.1.3)
- Implement additional enrollment criteria to enroll trainees according to the program and health sector needs (Q 5.1.4)

Annotations

Enrollment policy would imply adherence to possible national regulation as well as adjustments to local circumstances. If the anesthesia program/ unit does not control the enrollment policy, it would demonstrate responsibility by explaining relationships and drawing attention to consequences, e.g., imbalance between intake and teaching capacity.

Enrollment criteria should include interest, pre-requisite knowledge and skills, background education, physical fitness, national exam grade requirements, and criteria for upgrading trainees selection.

The health needs of the society would include consideration of intake according to gender, ethnicity, and other social requirements (socio-cultural and linguistic characteristics of the population), including the potential need for a special recruitment, admission, and induction policy for underprivileged trainees and minorities.

5.2. TRAINEES SUPPORT SYSTEMS

Basic standards

The Anesthesia program **must**:

- Ensure that the trainees have access to the following services:
 - ◆ Counseling on training, health, and social issues that could otherwise affect their success in the program (B 5.2.1)
 - ◆ Trainees support addressing the training (e.g., remedial support and peer-assisted learning. (B 5.2.2)
 - ◆ Access to basic 24/7 clinic services (B 5.2.3)
- Have a mechanism for trainees to appeal on matters related to trainees support services (B 5.2.4)
- Ensure support to extracurricular activities like trainees associations, council, sport, gender, HIV and green TVET .etc.... (B 5.2.5)

Quality improvement standards

The Anesthesia program **should**:

- Provide career guidance and advice on progression after completing the program (Q 5.2.1)
- Have a system/mechanism to evaluate and ensure the adequacy, effectiveness, and safety of the available trainees support services (Q 5.2.2)

- Support establishment of charity clubs (Q 5.2.3)

Annotations

Addressing social, financial, and personal needs would mean support in relation to social and personal problems and events, health problems, and financial matters, and would include access to health clinics, immunization programs, and health/disability insurance as well as financial aid services in forms of bursaries, scholarships, and loans.

5.3. TRAINEES REPRESENTATION

Basic standards

The Anesthesia program must:

- Formulate and implement a policy that ensures participation of trainees representatives and appropriate participation in all matters relevant to trainees (B 5.3.1)

Annotations

Participation of trainee's representatives would include trainee's self-governance and representation on the quality of training, assessment process, and other relevant bodies, as well as social activities and local health care projects.

6. PROGRAM CURRICULUM AND TEACHING, TRAINING AND LEARNING MATERIALS

6.1. PROGRAM CURRICULUM DESIGN AND DEVELOPMENT

Basic standards

The Anesthesia program curriculum **must**

- Be developed based on occupational standards (B 6.1.1)
- Reflect the specific context and conditions of occupational learning, respective relevant aspect of training delivery such as disparate target groups and their characteristics, mode of delivery, regional conditions and availability of training resources (B 6.1.2)
- Contain the contextual (knowledge-based), skills (performance-based) and attitudes (behavioral-based) requirement of the unit of competence (B 6.1.3)
- Reflect learning, progression, assessment and practice until competent (B 6.1.4)
- Follow the principle of modularization (structuring the contents around a set of competencies) (B 6.1.5)
- The learning module or modules (if there are several) of a unit of competence be self-contained (B 6.1.6)
- Covers the following two main components
 - ◆ TVET-Program Design (B 6.1.7)
 - ◆ Learning Modules (B 6.1.8)
- The Program Design must include
 - ◆ TVET-Program Title (B 6.1.9)
 - ◆ TVET-Program Description (B 6.1.10)
 - ◆ TVET-Program Learning Outcomes (B 6.1.11)
 - ◆ Duration of the TVET-Program (B 6.1.12)
 - ◆ Qualification Level and Certification (B 6.1.13)
 - ◆ Target Groups (B 6.1.14)
 - ◆ Entry Requirements (B 6.1.15)
 - ◆ Mode of Delivery (B 6.1.16)
 - ◆ TVET-Program Structure (B 6.1.17)

- ◆ Institutional Assessment (B 6.1.18)
- ◆ Teacher's Profile (B 6.1.19)
- ◆ Learning Modules (B 6.1.20)
- ◆ Resource Requirements (B 6.1.21)
- The Learning Module Design must include
 - ◆ TVET-Program Title (B 6.1.22)
 - ◆ Module Code and Title (B 6.1.23)
 - ◆ Nominal Duration (B 6.1.24)
 - ◆ Module Description (B 6.1.25)
 - ◆ Learning Outcomes (B 6.1.26)
 - ◆ Module Contents (B 6.1.27)
 - ◆ Learning Methods (B 6.1.28)
 - ◆ Assessment Methods and Criteria (B 6.1.29)
 - ◆ Resource Requirements (B 6.1.30)
- Follow practical Steps in the design and Development of Outcome Based Curriculum (B 6.1.31)
- Groups of trainers must periodically review and update the curriculum at appropriate intervals and based on revised EOS by the sector, emerging evidence and the needs of the society, students' performance assessment results, and feedback from trainees and other stakeholders (B 6.1.32)
- Communicate and ensure that the curriculum is available to staff, students, and other stakeholders (B 6.1.33)
- Prepare and implement schedule that indicates dates of registration, cooperative training, assessment, module ends, vacation, completion, and other major events (B 6.1.34)

6.2. TEACHING-TRAINING AND LEARNING MATERIALS (TTLM)

Basic standards

The Anesthesia program TTLM Must:

- Directly related to the occupational standards and the curriculum (B 6.2.1)
- Designed by the teacher to fit local condition and appropriate to intended trainees (B 6.2.2)
- Designed in a way that address all the learning outcomes within one learning module (B 6.2.3)

- Include Trainers guide, Learning guide and Assessment package (B 6.2.4)
- Follow the recommended Steps in Formulating *Learning Guides*, teacher guide, assessment package (B 6.2.5)
- Learning guide must be given to trainees at the beginning of the each Learning Outcome/ Unit of Competence (B 6.2.6)

Annotation

Curriculum is a comprehensive description about all relevant aspects of a TVET Program, including TVET Program Design and Learning Modules. A plan incorporating a structured series of intended learning outcomes and associated learning experiences. Curricula are based on the applicable Ethiopian Occupational Standard (EOS) the TVET Program is addressing.

Occupational standard defines the competences that a person or individual must possess to be able to perform and be productive in the world of work. It is composed of units of competence that define a particular scope of work resulting in a product, service or decision

Training, Teaching and Learning Materials (TTLM) are all types of materials suitable or specifically designed and developed to support occupational learning processes - and thus - helping to achieve the desired learning outcomes.

The **Learning Guide** is either a self-contained or resource-based packet of information and learning activities

Occupational Assessment is Process of determining if the person possessed the required competences stated in the occupational standard.

Competence: The possession and application of knowledge, skills and attitudes to perform work activities to the standard expected in the workplace

7. OUTCOME BASED TRAINING

7.1. INSTITUTIONAL TRAINING

Basic standards

The Anesthesia program institutional training must:

- Driven by competences written to the national occupational standards and address the basic competency/elements set by occupational standard (B 7.1.1)
- Allows for learners to enter and exit programs and receive an award for modules attained at any point (B 7.1.2)
- Allows for recognition of prior learning (RPL) (B 7.1.3)
- Be modular and provides opportunity for right mix of on and off the job (B 7.1.4)
- Training materials are directly related to the units of competence and the learning modules (B 7.1.5)
- Adapt instructional media, TTLM and assessment according to the trainees needs (B 7.1.6)
- Instructional media is individualized, self-paced instruction allowing the trainee to learn and move along independently without much or constant direction, correction and instruction from the teacher (B 7.1.7)
- Have assessment policy/ guideline that clearly define:
 - ◆ Range of assessment methods used for formative and summative evaluation (B 7.1.8)
 - ◆ Frequency and timing (B 7.1.9)
 - ◆ Promotion, repletion and readmission (B 7.1.10)
 - ◆ System for appeal assessment result (B 7.1.11)
 - ◆ Quality assurance process assessment practice (B 7.1.12)
- Conduct formative and summative assessment (B 7.1.13)
- Perform institutional assessment level by level to make ready for national assessment (B 7.1.14)
- Assessment of learners is based on performing competences required by a specific learning outcome and by the occupational standard as a whole (B 7.1.15)
- Have linkage with the health sector for training completers (B 7.1.16)

7.2. COOPERATIVE TRAINING

Cooperative training of nursing program must fulfill the following implementation phases

The preparation Phase

- Inspection of cooperative training sites and identify the available site *appropriate* to the training (B 7.2.1)

- Create awareness about cooperative training among institutions, practice sites and other concerned bodies (B 7.2.2)
- Create partnership and preparing joint action plan addressing training concerns (B 7.2.3)
- Signing of MoU (B 7.2.4)
- Assessing and capacitating (clinical trainers/ preceptors) and TVET Trainers by fulfilling their skill gap (B 7.2.5)
- Conducting Methodology training for clinical trainers/ preceptors (B 7.2.6)
- Prepare training plan by both TVET trainer and clinical preceptors) (B 7.2.7)

Implementation Phase

- Assigning clinical training coordinator and trainers (B 7.2.8)
- Assigning trainees by level and occupation (B 7.2.9)
- Use Training material (curriculum and Training, Teaching and Learning Materials (TTLM) (B 7.2.10)
- Conduct training as per unit of competencies (B 7.2.11)
- Conducting assessment as per Unit of Competency before proceeding to the succeeding Unit of Competency by industry trainers(clinical preceptors) (B 7.2.12)
- Conduct Occupational assessment at the end of level/program at the practical site (B 7.2.13)

The monitoring and evaluation phase

- Monitoring the training progress by TVET and Industry leaders/ coordinators (B 7.2.14)
- Assess the results (B 7.2.15)
- Make correction as required (B 7.2.16)
- Report writing (B 7.2.17)

Annotations

Cooperative training: is provided in cooperation between employers and a TVET institution. Cooperative training usually takes the form of training at a public or private TVET institution for part of the time and in the health institutions for the other part of the program duration

Clinical Trainer (Clinical instructor/ preceptor refers to qualified nurses and/or clinicians who are working on full-time basis in the respective experiential practice sites and have signed a formal agreement with the education and training institutions to coach

the students.

Formative and summative assessment: formative assessment is assessment used to improve trainees learning and performance by giving feedback, while summative assessment is used to decide if the trainees has to move to the next stage of learning. Both should be conducted on a continual basis.

8. CONTINUAL QUALITY ASSURANCE

Basic standards

The Anesthesia program **must**:

- Have a functional internal quality assurance system/ Health Science Educational Development Center (HSEDC) leading the quality assurance system with clearly defined duties/responsibilities and lines of communication (B 8.0.1)
- Allocate an adequate budget to the quality assurance unit to carry out its responsibilities (B 8.0.2)
- Assign a qualified person to coordinate the system (minimum of 2 years of teaching experience, training in educational quality assurance, and training and assessment of health care providers) (B 8.0.3)
- Conduct quality assessment using the internal quality standard tool (at least Bi-annually) and develop and implement clear strategies/work plans to fill the gaps identified (B 8.0.4)
- Have a system for regular curriculum evaluation and review (at least every year) (B 8.0.5)
- Seek external quality audit and verification by TVET /RHB or peer institutions and work on the recommendations given to ensure continual quality (B 8.0.6)
- Ensure duties and responsibilities within in cluster institutions according to the clustering guideline
 - ◆ Sharing cooperative training experience (B 8.0.7)
 - ◆ Share resource and skills, common assessment center (B 8.0.8)
 - ◆ Upgrading trainers and clinical preceptors skills (B 8.0.9)
 - ◆ Create employment opportunity (B 8.0.10)
 - ◆ Transfer of technology (B 8.0.11)

Quality improvement standards

The Anesthesia program **should**:

- Have a well-organized, functional, and vibrant internal quality assurance system that is responsible for monitoring and evaluation of input, process, output, outcome and impact of the educational and training program (Q 8.0.1)
- Systematically seek, analyze, and respond to trainers and trainees feedback (Collect trainees and trainer comments using structured questionnaire or suggestion book, take corrective action, and document) (Q 8.0.2)
- Conduct external verification by peer institutions/ programs/ units every 2 years (Q 8.0.3)
- Conduct review meetings with representatives from practice sites, industries, and professional bodies annually to evaluate the effectiveness of learning experiences (Q 8.0.4)

- Develop the structure, governance, and management of the organization to cope with changing circumstances and needs and, over time, accommodate the interests of the different groups of stakeholders (Q 8.0.5)

9. HEALTH EXTENSION SERVICE AND TECHNOLOGY TRANSFER

9.1. HEALTH EXTENSION SERVICE

Basic standards

The Anesthesia program must:

- Ensure the implementation of Health Extension Service so that
 - ◆ Identify level and type of occupation of Health professionals in the health care service (B 9.1.1)
 - ◆ Identify skill gap of health professionals based on occupational standard (B 9.1.2)
 - ◆ Fill the identified skill gaps based on the four Industry extension packages (KAIZEN, Technical skill, Technology and Entrepreneurship) to improve service delivery and competitiveness (B 9.1.3)
 - ◆ Assess their performance (B 9.1.4)

9.2. TECHNOLOGY TRANSFER

Basic standards

The Anesthesia program **must**

- Conduct Value chain analysis (B 9.2.1)
- Identify appropriate technology (B 9.2.1)
- Develop document (B 9.2.3)
- Prepare prototype (B 9.2.4)
- Conduct pilot test (B 9.2.5)
- Transfer new technology (B 9.2.6)
- Allocate a sufficient budget to Transfer new Technology to the community (B 9.2.7)

ANNEX I. ANATOMIC MODELS/MEDICAL SUPPLIES AND CONSUMABLES/WALL CHARTS

The anesthesia students' teaching skills lab must have at least the following items:

S.No	List of Equipment	Quantity	Remark
Airway management and accessory equipment			
a)	Set of laryngoscopes (with 5 different size blades)	05 sets	
b)	Different size endotracheal tube	03 from each	
c)	Endotracheal tube (with every size)	03 from each	
d)	Laryngeal mask airway (LMA) (with 9 different sizes)	02 from each	
e)	Nasopharyngeal airway (different size)	01 from each	
f)	Oropharyngeal airway (with 5 different sizes)	01 from each	
g)	Nasogastric (NG) tube (adult 16#)	10 pieces	
h)	Suction catheter	10 pieces	
i)	Suction machine	01 piece	
j)	Self-inflating bag (Ambu bag) for adult and pediatric patients	03 from each	
k)	Face mask (different size)	02 from each	
l)	Stylet	10 pieces	
m)	Bougie (pediatric and adult)	02 from each	
n)	Esophageal detector device	03 pieces	
o)	Combi-tube	02 pieces	
p)	Cricothyroidotomy kit	02 pieces	
q)	Nasal cannula	10 pieces	
r)	Spatula	05 pieces	
s)	Magill forceps	03 pieces	
t)	Tongue forceps	03 pieces	
u)	Mouth gag	03 pieces	
v)	Plaster	03 roll	
Monitoring equipment			
a)	Electrocardiogram (ECG)	01 piece	
b)	Capnography to measure ETCO ₂	01 piece	
c)	Pulseoxymetry	01 piece	
d)	Thermometer	10 pieces	
e)	NIBP measurement	10 pieces	
f)	Nerve stimulator	02 pieces	
Regional anesthesia equipment			
a)	22-, 25-, and 27-gauge LP needles	10 from each	
b)	Introducer for 27G needle	10 pieces	

	c) 16/18G tuohy needle for epidural anesthesia	10 pieces	
	d) Sponge forceps/ artery	10 pieces	
	e) Bandage	01 roll	
	f) Alcohol	01 bottle	
	g) Iodine	01 bottle	
	h) Savulone	01 bottle	
	i) Surgical gloves	50 pairs	
4.	Anesthesia machine with Halothane and Isoflurane vaporizers, spare corrugated tube, and oxygen concentrator/ cylinder	01	
5.	Different mannequins		
	a) Adult intubation mannequin	10 pieces	
	b) Neonate mannequin	05 pieces	
	c) Adult resuscitation (CPR) mannequin	05 pieces	
	d) Spinal anesthesia demonstration LP mannequin	05 pieces	
	e) Arm mannequin	05 pieces	For IV line
6.	Resuscitation equipment and drugs		
	a) Defibrillator	01	
	b) IV fluid with set	10 bags	
	c) IV cannula (18, 20, 22, and 24G)	10 from each	
	d) Tourniquet	10 pieces	
7.	Procedure guidelines and standards/checklist (printed and laminated)		
	a) Resuscitation guideline (adult and neonate)	10 copies each	
	b) Difficult airway management guideline	10 copies	
	c) Anaphylaxis management guideline	10 copies	
	d) Malignant hyperthermia management guideline	10 copies	
	e) Tachy and Brady arrhythmia management guidelines	10 copies	
	f) Infection prevention guideline	10 copies	
	g) Anesthesia machine checklist guideline	10 copies	
	h) Printed copy of anesthesia record sheet	50 copies	

ANNEX 2: ANESTHESIA PRACTICAL LEARNING SITES SELECTION CRITERIA

The anesthesia students' teaching clinical site must have:

- Pre-anesthetic evaluation/ assessment room
- Major operating theater having one each of the following:
 - ◆ Monitoring devices (see checklist for skills lab)
 - ◆ Airway management and accessory equipment (see checklist of skills lab)
 - ◆ Regional anesthesia equipment (see checklist for skills lab)
 - ◆ Anesthesia machine with Halothane and Isoflurane vaporizers, spare corrugated tube, and oxygen concentrator/cylinder
 - ◆ Resuscitation equipment and drugs (see checklist for skills lab)
 - ◆ Printed copies of procedure guideline and standards (see checklist for skills lab)
- Minor operation room
- Intensive care unit (ICU)
- Post-anesthesia care unit (PACU) or recovery room (RR)
- Pain clinic
- Anesthesia induction room
- Remote anesthesia care site (radiology and burn units)

ANNEX 3: LEVEL V ANESTHETIC NURSE PROGRAM LEARNING OUTCOMES

- Plan, Monitor and Manage Anesthetic Nursing
- Prepare Anesthetic Environment
- Manage Anesthetic service in Pre, Intra and Post-Operative care
- Implement Specialist Access and Egress Procedures
- Manage Emergency Phase of Anesthesia
- Provide Counseling and Stress Management in Pre and Post Anesthesia
- Confirm Physical Health Status
- Provide Assistance during an Emergency
- Develop Disaster Plan
- Identify and Perform Fundamental Ethical Standards and Values
- Manage Quality
- Contribute to Policy Development
- Facilitate and Capitalize on Change and Innovation
- Develop and Implement Strategies to Enhance Client Safety
- Maintain Effective Health Work Environment
- Establish and Conduct Business Relationships.

ANNEX 4: REFERENCE BOOKS FOR LEVEL V ANESTHETIC NURSE (SUGGESTIONS NOT LIMITED TO)

S.No	Area of teaching	List of Textbooks Required for the Course	Year of Publication
1	Communication English Skill		
2	Basic Writing Skills		
3	Computer Application in Health	Sitot Tedla, Fundamentals of Information Technology	As of 2000
4	Civics and Ethical Education	A Framework of Civic Education. Understanding People and Social Life	As of 2000
5	Medical Psychology	Morgan, Introduction to General Psychology	As of 2000
6	Introduction to Sociology	Cohen and Orbuch, Introduction to Sociology	As of 2000
7	Human Anatomy I and II	<ul style="list-style-type: none"> • Gray's Anatomy • Torora, Principles of Human Anatomy • Atlas-illustrated-anatomy 	As of 2000
8	Human Physiology I and II	Guyton and Hall, Textbook of Medical Physiology	As of 2000
10	Biochemistry	Champe and Harvey, Lippincott's Illustrated Review of Biochemistry	As of 2000
11	Medical Microbiology	Paniker, C. K., Text Book of Medical Parasitology	
12	Medical Parasitology and Immunology	Brooks, G.F. Butes, Medical Microbiology	As of 2000
13	Pathophysiology	Rubin, E., Essential Pathology	As of 2000
14	General Pharmacology	Hahn, <i>Pharmacology in Nursing</i>	
15	Health System Management	On Being in Charge: A Guide for Middle Level Management Stoner. Principles of Management	
16	Human Nutrition	Tefera, B., Human Nutrition for Health Science Students	
17	Communicable Diseases	Manson's Tropical and Infectious Diseases	
18	Health Education	Pender, Murdaugh, and Parsons, Health Promotion in Nursing Practice	
19	Introduction to Nursing Art	Craven, R. F. and Himle, Fundamentals of Nursing Luckmann and Sorenson, Basic Nursing	
20	Clinical laboratory Method		
21	Physical Diagnosis		
22	Internal Medicine	Smeltzer, S. D., and Bare, B., Brunner and Suddarth's Textbook of Medical Surgical Nursing	
23	General Surgery	Smeltzer, S. C., and Bare, B., Brunner and Suddarth's Textbook of Medical Surgical Nursing	

24	Obstetrics and Gynecology	Myles, M., Textbook of midwives, ELBS
25	Pediatrics	Marlow, D., Textbook of Pediatric Nursing
26	Professional Anesthesia Courses and Practices	<ul style="list-style-type: none"> • Clinical Anaesthesia, 3rd Edition • Clinical Anesthesia, 6th Edition • Ambulatory Anesthesia: The Requisites • Fundamentals of Anaesthesia, 3rd Edition • Complications in Anesthesia, 2nd Revised Edition • Morgan and Mikhail's Clinical Anesthesiology, 5th Edition • Faust's Anesthesiology Review, 4th Edition • Atlas of Regional Anesthesia, 4th Edition • Regional Anesthesia and Pain Management, 1st Edition • Stoelting's Anesthesia and Co-Existing Disease • Step by Step Regional Anesthesia • Yao and Artusio's Anesthesiology: Problem-Oriented Patient Management, 3rd Edition • Understanding Anesthesia Equipment • Basics of Anesthesia • Pharmacology and Physiology in Anesthetic Practice, 3rd Edition • Anesthesiologist's Manual of Surgical Procedures • Smith and Aitkenhead's Textbook of Anaesthesia, 6th Edition

ANNEX 5: DICTIONARIES AND ENCYCLOPEDIAS

A. PROGRAM/ SUBJECT-SPECIFIC DICTIONARIES

S.No.	List of dictionaries	Year of Publication	Number of Copies per 50 Students or 1 Class
1	Medical dictionary	Latest	2
2	Pharmaceutical dictionary	Latest	2

B. PROGRAM/ SUBJECT-SPECIFIC ENCYCLOPEDIAS

S.No.	List of encyclopedias	Year of publication	Number of Copies per 50 Students or 1
	Martindale	Latest	5
	Encyclopedia on general	Latest	1

ANNEX III. NATIONAL SERVICE DELIVERY GUIDELINES

S.no	Title	Unit	Number
1.	Infection Prevention and Patient Safety Guidelines	Number	01/05 student
2.	Guidelines for Management of OIs and ART in Adolescents and Adults	Number	01/05 student
3.	Health Policies and Development Plan	Number	01/05 student
4.	Guidelines for Pediatric HIV/AIDS Care and Treatment	Number	01/05 student
5.	Ethiopian Hospital Nursing Standard	Number	01/05 student
6.	National PMTCT Guidelines	Number	01/05 student
7.	National Malaria Prevention and Management Guidelines	Number	01/05 student
8.	National Guidelines for Management of STI Using Syndromic Approach	Number	01/05 student
9.	Obstetric Protocol	Number	01/05 student
10.	National Adolescent and Youth Reproductive Health Strategy	Number	01/05 student
11.	National Guidelines for Family Planning Services	Number	01/05 student
12.	Nursing Care Practice Standard	Number	01/05 student
13.	Guidelines for HIV Counselling and Testing	Number	01/05 student
14.	Guidelines for Implementation of a Patient Referral System	Number	01/05 student
15.	National Reproductive Health Strategy	Number	01/05 student
16.	National Guidelines for Management of Chronic Illness	Number	01/05 student
17.	National Guidelines for Epidemic and Disaster Prevention and Management	Number	01/05 student
18.	IMNCI Chart Booklet	Number	01/05 student
19.	ICCM Chart Booklet	Number	01/05 student
20.	Child and Infant Feeding Guidelines	Number	01/05 student
21.	Skills Lab Procedure Manual/Standard of Practice	Number	01/05 student

ANNEX IV. INDICATIVE SOURCES OF EVIDENCE FOR VERIFICATION OF STANDARDS

Indicative sources of evidence for verification of the standards for Area 1: Program goals and outcomes

- Employer survey
- Curriculum
- Academic brochures and prospectus or bulletin
- Documentation on stakeholders' input (proceedings)
- Institution's website
- Matrix of mission and vision of the HEI program goals
- Matrix of program aims and educational outcomes
- Interviews with stakeholders, senior management, academic staff, and students
- Matrix of educational outcomes with the national scope of practice for anesthesia professionals

Indicative sources of evidence for verification of the standards for Area 2: Governance, leadership, and administration

- Program/ unit/ institute legislation and personnel policy
- Staff recruitment, promotion, development and appraisal policies, procedures, or criteria
- Staff job description and workload document
- Memorandum of understanding signed with stakeholders
- Minutes of meetings at program/ unit, departmental/unit, and different standing committee levels
- Interviews with management staff, program/ unit leaders, department/unit heads, administrative/ academic staff, and trainees representatives
- Staff statistics

Indicative sources of evidence for verification of the standards for Area 3: Educational resources

- Document on asset inventory
- Interviews with program/ unit leader, librarian, department heads, academic staff, coordinator of experiential program, students, and administration staff
- Observation/survey of offices, class rooms, computer lab, skills lab, library, store for skills lab materials, conference rooms, practice site, and other facilities indicated in the standard
- Document indicating facility cleaning and maintenance schedule
- Memorandum of understanding signed with practicum sites
- Proceedings of review meetings conducted with clinical practice sites

- Documents indicating strategic plan, operational work plan, and budget plan

Indicative sources of evidence for verification of the standards for Area 4: Academic staff, support staff, and preceptors

- Legislation, policy, and guidelines
- Staff recruitment, promotion, development, and appraisal procedure/criteria
- Document staff job descriptions and workload
- Documented evidence on academic staff engagement in teaching, research, and community services
- Documents on academic staff members' and preceptors' evaluation results and feedback
- Minutes of meetings at departmental, program/ unit, and standing/ad-hoc committee level
- Interviews with senior management, deans, department heads, coordinator of the experiential training, academic staff, and trainees representatives
- Guidelines and tools for experiential training/placement evaluation
- Staff statistics
- Trainees enrollment data
- Lecture timetable
- Filled-in staff appraisal form

Indicative sources of evidence for verification of the standards for Area 5: Trainees admission and support services

- Trainees handbooks
- Documents on trainees counseling; career guidance, etc.
- Trainees enrollment statistics
- Trainees admission policy/guidelines
- Policies on trainees transfer, credit transfer, course exemption, and waiver
- Interviews with senior management, dean of students, students' council, students, and academic and administration staff
- College/ program/ unit website
- Infrastructure for trainees support services (clinic, sport, and lounge, etc.)
- Documentation on announcements about admission
- Documentation on appeal mechanism
- Documentation on orientation program
- Documentation on strengthening and bridging course

Indicative sources of evidence for verification of the standards for Area 6: Program relevance and curriculum

- Curriculum development guideline/procedures
- Minutes of meetings of committees dealing with curriculum development,

approval, monitoring, and review at department and program/ unit /institute level

- Curriculum review reports
- Course catalogues (showing the structure and aims of each program, course aims, descriptions, indicative activities, and book lists).
- Interviews with senior management, program/ unit leaders, department heads, academic staff, students, graduates, and employers

**Indicative sources of evidence for verification of the standards for Area 7:
Teaching- learning and assessment**

- Curriculum
- Syllabus for major and supportive courses
- Handouts of major and supportive courses
- Schedule for clinical practice
- Guideline for experiential training
- Consultation hours posted on offices
- Exam papers of major and supportive courses
- Checklist for skill teaching and assessment
- Legislation of the HEI/ program/ unit
- Examination and assessment guideline
- Report of external examiners
- Academic calendar
- Examination committee reports and minutes
- Reports of reviews of teaching, learning, and assessment
- Observation of classroom sessions, practice sessions, skills lab sessions
- Interviews with school leader, department heads, academic staff, coordinator of experiential program, students, and preceptors

**Indicative sources of evidence for verification of the standards for Area 8:
Trainees progression and graduate outcomes**

- Registrar's office reports
- Data on trainees attrition and graduation rates
- Reports on graduate tracer studies
- Reports on employer satisfaction studies
- Employer feedback reports
- Lists of employer contacts
- Records on students' years of stay in the school (enrollment to graduation)
- Records on engagement of trainees in scholarly and extracurricular activities

- Formal documents on educational and scholarship linkages, students' extracurricular activities, etc.
- Interviews with senior management, registrar, coordinator of experiential training, academic staff, students, graduates, employers, etc.

**Indicative sources of evidence for verification of the standards for Area 9:
Continual quality assurance**

- Internal quality assurance (IQA) manual for anesthesia program
- IQA guideline
- Assessment results and intervention strategy documents on IQA
- Minutes of meetings of IQA unit
- Reports on curriculum review/appraisal
- Legislation of the HEI/school
- Interviews with school leader, department heads, academic staff, coordinator of experiential program, students, and preceptors

**Indicative sources of evidence for verification of the standards for Area 10:
Research, development, and educational exchanges**

- Policy documents on budget and facility allocation for academic staff/trainees research
- Document on identified priority research areas of the school/institute and the country
- Policy on research and obligatory publication in reputable national/international journals for each academic staff for existence, appraisal, and promotion
- Research finding reports of academic staff/trainees and research finding dissemination documents

REFERENCES

1. Program Level Quality Audit Manual, HERQA, HERQA Publication Series 05, March 2013, Ethiopia
2. Standardized Program Accreditation and Re-Accreditation Checklist Textbooks and Laboratory Equipment for Anesthesia program, TVET, August 2012, Ethiopia.
3. National Harmonized Level V Anesthesia, Addis Ababa, November, 2011.
4. Generic Performance Standards for Pre-Service Education in Health, February 2012, Jhpiego-Ethiopia.
5. Basic Medical Education WFME Global Standards for Quality Improvement. The 2012 Revision, World Federation of Medical Education Office. University of Copenhagen; Denmark, 2012.
6. Program Level Audit Manual: Higher Education Relevance and Quality Agency, March 2013.
7. Scope of Practice for Health Professionals in Ethiopia, Food, Medicine and Health Care Administration and Control Authorities, 2014.
8. WHO. World Health Statistics, 2007. Geneva, World Health Organization, 2007.
9. Standard Based Management and Recognition. Jhpiego Ethiopia, November 2012. 9. Nursing Education Standards: Philippines.
10. Standards for Accreditation of Nurse Anesthesia Educational Programs, Council on Accreditation of Nurse Anesthesia Educational Programs, 2014.
11. Transforming and Scaling up Health Professionals' Education and Training. WHO, 2014.
12. The Health Impacts of Pre-Service Education: An Integrative Review and Evidence-Based Conceptual Model, 2012.
13. Standards for Assessment and Accreditation of Primary Medical Programs by the Australian Medical Council, 2012.