Higher Education Relevance and Quality Agency

National Accreditation and Quality Improvement Standards for Anesthesia Degree Program

First Edition
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ABBREVIATIONS

CEU	Continuing Education Unit
CPD	Continuing Professional Development
DVD	Digital Video Disk
EAA	Ethiopian Association of Anaesthetists
FMOH	Federal Ministry of Health
HEI	Higher Education Institution
HERQA	Higher Education Relevance and Quality Agency
HIV	Human Immunodeficiency Virus
ICT	Information and Communication Technology
ICU	Intensive Care Unit
IQA	Internal Quality Assurance
IT	Information Technology
SOP	Standard Operating Procedure
USAID	United States Agency for International Development
VHS	Virtual Host Storage
WFME	World Federation of Medical Education

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INTRODUCTION

Assuring the quality and relevance of higher education is recognized as a priority agenda both in the Education Sector Development Program IV and the Growth and Transformation Plan of Ethiopia. The Higher Education Proclamation 650/2009 mandated the Higher Education Relevance and Quality Agency (HERQA) to ensure that higher education institutions (HEIs) provide high-quality and relevant education. Moreover, in Article 22, the proclamation instructs all HEIs of Ethiopia to establish a reliable internal quality assurance (IQA) system.

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 HEI to its staff, to students, to employers, and to other stakeholders.

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.

In response, HERQA, 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 these accreditation and quality improvement standards for the anesthesia degree program. The standards will serve the following purposes:

- Provide a framework against which anesthesia schools can measure themselves, identify the gaps, and implement quality enhancement programs.
- Guide regulatory authorities like HERQA to accredit anesthesia degree programs.
- Provide a framework for HERQA to conduct program-level quality audits and develop tailored feedback.
- Inform higher education institutions about the quality improvement standards in specific areas and encourage them to achieve the standards.
- Stimulate ideas for establishing a quality assurance system for basic anesthesia education.

USES OF STANDARDS

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

1. Anesthesia School Self-Evaluation of the Institution and Its Program

The primary intention of HERQA in introducing the standards as an instrument for quality improvement is to provide a framework against which anesthesia schools can measure themselves in a voluntary self-evaluation and self-improvement of the program.

2. External Evaluation or Peer Review

The process described can be further developed by inclusion of evaluation and counseling from external peer-review groups.

3. Combination of Self-Evaluation of Institution and Program and External Peer Review

HERQA considers such a combination to be the most valuable method.

4. Recognition and Accreditation

Depending on local needs and traditions, the guideline can also be used by national or regional authorities/agencies dealing with recognition and accreditation of the anesthesia schools.

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 school and fulfilment demonstrated during evaluation of the school. *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 schools and basic anesthesia education. Fulfilment of or initiatives to meet some or all of such standards should be documented by anesthesia schools. Fulfilment of these standards will vary with the stage of development of the anesthesia schools, their resources, and educational policy. Even the most advanced schools might not comply with all standards. *Standards for quality improvement are expressed by a* ***"should."***

Altogether, the document includes 212 basic standards and 118 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.

AREAS OF ACCREDITATION AND QUALITY IMPROVEMENT STANDARDS

HERQA has identified the following 10 aspects of operation, which will form the focus points for a quality audit model at program-level in Ethiopian HEIs. They are closely related to the focus areas the Agency has been using for the past 9 years for institutional quality audit. The benefits, we believe, are twofold. One, using this model will help the Agency transfer the experience, knowledge, and skills acquired during the institutional quality audits undertaken so far to the program-level audit. Two, it will enable the Agency to conduct program-level audits in keeping with international norms, as most quality assurance agencies seem to be comfortable with the use of all aspects of operation stated in the following 10 areas when assessing programs:

1. Program Goals and Learning Outcomes
2. Governance, Leadership, and Administration
3. Educational Resources
4. Academic and Support Staff
5. Student Admission and Support Services
6. Program Relevance and Curriculum
7. Teaching-Learning and Assessment
8. Student Progression and Graduate Outcomes
9. Continual Quality Assurance
10. Research and Development and Educational Exchanges

I. PROGRAM GOALS AND LEARNING OUTCOMES

1.1 PROGRAM GOALS/AIMS

Basic Standards

The anesthesia school **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 HEI (B 1.1.2)
- Outline in its statement of program goals that the trained anesthetists are:
  - ◆ Competent at a basic level and capable of undertaking the role of anesthetists as defined by the health sector (B 1.1.3)
  - ◆ Prepared and ready for postgraduate 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)

Quality Improvement Standard

The anesthesia school **should:**

- Ensure that the program goal addresses:
  - ◆ Aspects of global health (Q 1.1.1)
  - ◆ Anesthesia research (Q 1.1.2)

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 anesthesia school 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 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, 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 school's own principles and in respect of the autonomy of universities. Social accountability is sometimes used synonymously with social responsibility and social responsiveness. In matters outside its control, the anesthesia school would still demonstrate social accountability through advocacy and by explaining relationships and drawing attention to consequences of the policy.

Aspects of global health would include awareness of major international health problems, and also of health consequences of inequality and injustice.

1.2 PARTICIPATION IN THE FORMULATION OF THE PROGRAM GOALS AND OUTCOMES

Basic Standard

The anesthesia school must:

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

Quality Improvement Standard

The anesthesia school 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 students, faculty, Ministry of Education, professional associations, Ministry of Health, HERQA, education strategic center, and the public.

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

1.3 INSTITUTIONAL AUTONOMY AND ACADEMIC FREEDOM

Basic Standard

The anesthesia school **must:**

■ Have institutional autonomy to formulate and implement policies for which its faculty/academic staff and administration are responsible, especially regarding:

♦ Design of the curriculum (B 1.3.1)

♦ Use of the allocated resources necessary for implementation of the curriculum (B 1.3.2)

Quality Improvement Standard

The anesthesia school **should:**

■ Ensure academic freedom for its staff and students:

♦ In addressing the actual curriculum (Q 1.3.1)

♦ In exploring the use of new research results to illustrate specific subjects without expanding the curriculum (Q 1.3.2)

Annotations

Institutional autonomy would include appropriate independence from government and other counterparts (regional and local authorities, religious communities, private cooperations, the professional unions, and other interest groups) to be able to make decisions about key areas

such as design of curriculum, assessments, student admissions, staff recruitment/selection and employment conditions, research, and resource allocation.

Academic freedom would include appropriate freedom of expression and freedom of inquiry and publication for staff and students.

1.4 EDUCATIONAL OUTCOMES/GRADUATE PROFILES/CORE COMPETENCIES OF THE PROGRAM

Basic Standards

The anesthesia school **must:**

- Have clearly defined educational outcomes that are in line with and supportive of the program goals (B 1.4.1)
- Define the intended educational outcomes that students should exhibit upon graduation in relation to:
    - ◆ Their achievements at a basic level regarding knowledge, skills, and attitudes (B 1.4.2)
    - ◆ Their commitment to and skills 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 student conduct with respect to fellow students, faculty members, other health care personnel, and patients and their relatives (B 1.4.5)
- Make the educational outcomes known to the students and faculty (B 1.4.6)

Quality Improvement Standards

The anesthesia school **should:**

- Review the outcomes periodically in consultation with principal stakeholders to ensure that the educational outcomes are in line with the needs of the health sector and the society (Q 1.4.1)
- Specify outcomes related to engagement of the students in anesthesia research (Q 1.4.2)
- Ensure that educational outcomes address aspects of global health (Q 1.4.3)

Annotation

Educational outcomes refers to statements of knowledge, skills, and attitudes that students are expected to demonstrate at the end of a period of learning.

Refer to annotations in 1.1 *for lifelong learning* and *aspects of global health.*

Refer to annotations in 1.2 for *principal stakeholders.*

2. GOVERNANCE, LEADERSHIP, AND ADMINISTRATION

2.1 GOVERNANCE OF THE PROGRAM

Basic Standard

The anesthesia school **must:**

- Define its governance structure and functions including its relationships within the HEI (B 2.1.1)

Quality Improvement Standards

The anesthesia school **should:**

- In its governance structures, set out the committee structure, and reflect representation from:
    - Academic staff (Q 2.1.1)
    - Students (Q 2.1.2)
    - Principal stakeholders (Q 2.1.3)
- Ensure transparency of the work of governance and its decisions (through newsletters, web information, disclosure of minutes, etc.) (Q 2.1.4)

Annotation

Governance means the act and/or the structure of governing the school. Governance is primarily concerned with policymaking, 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 anesthesia school, curriculum, admission policy, staff recruitment and selection policy, and decisions on interaction and linkage with anesthesia practice and the health sector as well as other external relations.

Refer to annotations in 1.2 for *principal stakeholders.*

2.2 ACADEMIC LEADERSHIP OF THE PROGRAM

Basic Standards

The anesthesia school **must:**

- Describe the responsibilities of its academic leadership for definition and management of the anesthesia educational program (B 2.2.1)
- Have a designated leader (anesthetist who has a master's or doctoral degree and 2 years of experience in the academic area) (B 2.2.2)

Quality Improvement Standard

The anesthesia school **should:**

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

Annotation

Academic leadership refers to the positions and persons within the governance and management structures being responsible for decisions on academic matters in teaching, research, and service and would include school leader, vice school leader, heads of departments/units, and chairs of standing committees.

2.3 ADMINISTRATIVE STAFF AND MANAGEMENT

Basic Standard

The anesthesia school **must:**

- Have adequate administrative and professional staff that are appropriate to:
  - ♦ Support implementation of educational program and related activities (B 2.3.1)
  - ♦ Ensure good management and resource deployment (B 2.3.2)

Quality Improvement Standard

The anesthesia school **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 policymaking and implementation of policies and plans and would depending on the organizational structure of the administration; include head and staff in the dean's office or secretariat, heads of financial administration, staff of the budget and accounting offices, officers and staff in the admissions office, and heads and staff of the departments for planning, personnel, and information technology (IT).

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 school.

2.4 EDUCATIONAL BUDGET AND RESOURCE ALLOCATION

Basic Standards

The anesthesia school **must:**

- Have a clear line of responsibility and authority for resourcing the program, including a dedicated educational budget (B 2.4.1)
- Allocate the resources necessary for the implementation of the curriculum and distribute the educational resources in relation to educational needs (B 2.4.2)
- Ensure that the budget allocation matches with student enrollment (B 2.4.3)

Quality Improvement Standards

The 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 distribution of the resources, take in to 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 school **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 staff and students, with partners in the health sector (B 2.5.2)

Quality Improvement Standards

The anesthesia school **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 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 school sends students to a certain hospital for practice; in exchange, staff at the hospital are given educational opportunities at the same school.

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

3. EDUCATIONAL RESOURCES

3.1 LECTURE HALLS/CLASSROOMS

Basic Standards

The anesthesia school **must:**

- Have lecture halls/classrooms for group, tutorial, and seminar activities with adequate space (1.4 m^2/student for group/tutorial and 1.6 m^2/student 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 markers and board cleaner (B 3.1.4)

- Ensure that the rooms are well-illuminated (words written in pencil can be read in any corner of the room, and screen-projected words, pictures, and videos can be 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 a 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 school **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 having 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 students and/or teachers to connect their laptops to the video projector or to play a VHS/DVD movie. The new standard TEC (technology-enhanced classroom) model includes: a DVD/VHS combo, RCA video and audio input, laptop VGA (video graphics array) and audio input, network connectivity, amplifier and speakers, high-powered projector (3,000 lumens), and permanent projector screen (powered or pull-down).

3.2 OFFICE FOR STAFF

Basic Standards

The anesthesia school **must have:**

- A school dean/head office equipped with:
    - ◆ Printer, scanner, photocopy machine, and duplicating machine (B 3.2.1)
    - ◆ Fax and 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 m^2/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 Standard

The anesthesia school **should have:**

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

3.3 SKILLS DEVELOPMENT CENTER/LABORATORY

Basic Standards

The anesthesia school **must:**

- Have a skill development center/laboratory to practice relevant biomedical experiments, airway management, regional and general anesthesia, pain management, basic and advanced cardiac life support (child and adult), and monitoring of a patient parameters (B 3.3.1)
- Ensure a learning environment that is safe for staff, students, patients, and is relevant to their future careers (B 3.3.2)
- Ensue that each laboratory room has:
    - ◆ Adequate space for skill demonstration, practice, and discussion (2.2 m^2/student) (B 3.3.3)
    - ◆ An adequate supply of functional laboratory equipment to learn essential competencies (with the ratio of one piece of equipment for six students in each lab session) (see Annex I) (B 3.3.4)
    - ◆ Adequate supplies and chemicals as listed in the respective lab manuals (B 3.3.5)
    - ◆ A dedicated office (B 3.3.6)
    - ◆ Safety manuals, posted safety precautions, a fire extinguisher, an emergency shower, and infection prevention equipment (B 3.3.7)
    - ◆ Uninterrupted water and power supply for each bench (B 3.3.8)

- An adequate number of movable chairs, tables for each station, a labeled shelf with locks, dust bins in all the stations, and storage (B 3.3.9)

- Audiovisual aids including video sets (B 3.3.10)

- Adequate illumination and ventilation (B 3.3.11)

- 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 3.3.12)

- A regular cleaning schedule and follow-up for the facility (B 3.3.13)

Quality Improvement Standards

The anesthesia school **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 (Q 3.3.2)

- Have a system for tracking all materials and equipment after each practice (Q 3.3.3)

- Have a central research lab (core lab) where the staff and students undertake anesthesia research activities (Q 3.3.4)

- Have a facility to house animals for the courses offered by the program and for research (Q 3.3.5)

- Have a regular maintenance schedule for the laboratory facility and equipment (Q 3.3.6)

Annotation

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

3.4 PRACTICAL TRAINING FACILITIES/CLINICAL PRACTICE SITES

Basic Standards

The anesthesia school **must:**

- Define appropriate clinical/practicum site selection criteria that encompass but are not limited to:

  - Having an adequate client caseload and case mix as per the core competencies (B 3.4.1)

  - Having sufficient staff who are willing to be preceptors (B 3.4.2)

  - A range of clinical practice sites (primary, secondary, tertiary levels) and specialized research centers (B 3.4.3)

  - A practice standard of practical training facilities that matches what is taught in the school (B 3.4.4)

- Have a sufficient number and variety of practicum sites for mandatory and elective anesthesia practice experiences, including sites for practice in:

  - Preoperative anesthetic assessment (B 3.4.5)

- Anesthesia induction (B 3.4.6)

- Airway management (B 3.4.7)

- Pain management (B 3.4.8)

- Intraoperative maintenance of anesthesia (B 3.4.9)

- Monitoring of anesthetized patients (B 3.4.10)

- Emergence of anesthesia care (B 3.4.11)

- Critical care services (B 3.4.12)

- Checking and maintenance of anesthesia equipment (B 3.4.13)

- Resuscitation of a cardiac arrest patient (B 3.4.14)

- Ensure the availability of necessary resources for giving the students adequate clinical experience, including national service delivery guidelines, personal protective equipment, learning tools (checklists, log books, SOPs), and other essential equipment (B 3.4.15)

- Ensure easy accessibility of clinical practice sites including transport facilities to distant sites (B 3.4.16)

Quality Improvement Standards

The anesthesia school **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 sites have a mini-library with essential reference books and guidelines (Q 3.4.4)

- Use accredited clinical practice sites (Q 3.4.5)

3.5 IT FACILITIES

Basic Standards

The anesthesia school **must:**

- Ensure students have access to computers with Internet connectivity (one computer for three students) (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 school **should:**

- Have subscriptions to educational websites/resources for staff and students' use (Q 3.5.1)

- Ensure that the IT center is accessible for student independent learning (outside of working hours) (Q 3.5.2)

- Have regular/scheduled IT facility inspection and maintenance services (Q 3.5.3)

3.6 LIBRARY

Basic Standard

The anesthesia school **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 students 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 (a ratio of 1:15 students) relevant to the courses taught (B 3.6.9)

  - 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 (see Annex V) (B 3.6.11)

Quality Improvement Standards

The anesthesia school **should have:**

- An automated library system (system for recording and cataloging material and for ensuring the security of materials) (Q 3.6.1)

- A system to take feedback from users and update its services on a regular basis (Q 3.6.2)

- 24/7 access to 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, 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 STUDENT AMENITIES

Basic Standards

The school/department **must:**

- Have an entity/unit responsible for student support, addressing academic, social, financial, and personal needs (B 3.7.1)
- Ensure safe and adequate student facilities including lounges, catering, student housing (if possible), and sports and recreational facilities (B 3.7.2)
- Allocate resources (budget, facilities, and qualified personnel) for student support programs (B 3.7.3)
- Ensure the availability of a student clinic, counseling, and social support units at institution level (B 3.7.4)
- Ensure that different facilities on campus are accessible to students with disabilities (B 3. 7.5)

Quality Improvement Standards

The school/department **should have:**

- Regular/scheduled facility inspection and maintenance services (Q 3.7.1)
- A student complex providing a variety of services (Q 3.7.2)

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 Standard

The anesthesia school **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 preceptor support for smooth curriculum implementation (B 3.8.5)

Quality Improvement Standards

The anesthesia school **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. ACADEMIC STAFF, SUPPORT STAFF, AND PRECEPTORS

4.1 STAFF RECRUITMENT, AND DEVELOPMENT AND RETENTION POLICY/GUIDELINES

Basic Standards

The anesthesia school **must:**

- Ensure the existence of a clearly stated, appropriate, and effectively implemented policy and procedure for recruitment and promotion of staff that outline:

  - The type, responsibilities, and balance of the academic staff of the basic biomedical sciences, clinical, professional courses, and the behavioral and social sciences required to deliver the curriculum adequately (B 4.1.1)

  - The balance between staff teaching major and supportive courses, full-time and part-time staff, and academic and non-academic staff (B 4.1.2)

  - Equitable distribution of duties and responsibilities among the academic staff (B 4.1.3)

  - Promotion of staff to offices and academic ranks (B 4.1.4)

  - Criteria for scientific, educational, and clinical merit, including the balance between teaching, research, and service qualifications (B 4.1.5)

  - The specific responsibilities of its academic staff and mechanisms for monitoring them (B 4.1.6)

- Ensure the existence of mechanisms and procedures for professional development and career advancement of the academic staff such as advanced training, specialized courses, pedagogical training, etc. (B 4.1.7)

- Have mechanisms to identify the human resource needs of the program and training needs of the staff (B 4.1.8)

- Have a system for orienting and mentoring of new academic staff (B 4.1.9)

- Ensure that each instructor has a technical update in the field of instruction in the past 2 years with a minimum of 30 continuing education units (CEUs)/year (B 4.1.10)

- Have an evaluation system for academic staff performance that:

  - Is carried out regularly using standardized formats that are regularly updated (B 4.1.11)

  - Is performed by academic staff themselves, students, peers, and the department head (B 4.1.12)

  - Is specific and enables timely provision of constructive feedback to instructors (B 4.1.13)

  - Has documented results to be used for decision-making and staff development (B 4.1.14)

  - Encompasses technical knowledge, communication skills, teamwork, and attitudes/behavior (B 4.1.15)

Quality Improvement Standards

The anesthesia school **should:**

- Formulate and implement a performance-based incentive system (based on performance evaluation results) for the academic staff (Q 4.1.1)

- Develop and implement a staff retention policy (Q 4.1.2)

- In its policy for staff recruitment and selection take into account criteria such as relationship to its mission, including significant local issues (Q 4.1.3)

Annotation

Significant local issues would include gender, ethnicity, religion, language, and other issues of relevance to the school and the curriculum.

4.2 TEACHING STAFF

Basic Standards

The anesthesia school **must**:

- Implement a ratio of academic staff to students of 1:20 for classroom teaching

  (B 4.2.1)

- Ensure that the number of students assigned to skills labs and practical attachments is in line with specific profession requirements and local context (B 4.2.2)

- Require the following qualifications of the academic staff:

  ♦ Specialty Certificate in Anesthesiology or Master of Science (M.SC) and above in the respective fields of anesthesia, with at least 2 years of clinical anesthesia experience in the related field for major/professional courses (assistant lecturers may teach chapters of a course, but not a full course) (B 4.2.3)

  ♦ Master's Degree, or Bachelor's Degree with at least 2 years' working experience in related field for supportive and common courses (B 4.2.4)

  ♦ First degree and above for all instructors in the following distribution (Doctor of Philosophy [PhD] 30%, Master's 50%, and first degree 20% or less) (B 4.2.5)

- Implement a ratio of full-time and part-time teaching faculty of 3:2 (60% and 40% respectively) (B 4.2.6)

- Assign one academic staff member to coordinate practical/clinical programs that facilitate practical learning (B 4.2.7)

- Assign a skills lab coordinator with a Bachelor's Degree in the anesthesia profession (B 4.2.8)

- Ensure that each instructor has taken a course on teaching methodology that enables him/her to teach and assess anesthesia students effectively (B 4.2.9)

Quality Improvement Standards

The anesthesia school **should:**

- Implement a ratio of academic staff to student of 1:5 for practical anesthesia teaching (Q 4.2.1)

- Require that all instructors (classroom, skills lab, and practical) have qualifications of Master's Degrees and above (Q 4.2.2)
- Ensure that instructors are involved in providing community services, preferably related to their specialty (Q 4.2.3)

Annotation

Qualifications of academic staff would mean appropriateness of the high-level trainings relevant to the course being taught. A school of anesthesia should have academic staff members with the following qualifications to teach major/professional courses: internal medicine, surgery, gynecology and obstetrics, pediatrics, radiology, regional anesthesia, monitoring and equipment, pain management, critical care (intensive care unit [ICU]) clinical anesthesia for specialty surgery, and pharmacoanesthetics.

4.3 PRECEPTORS

Basic Standards

The anesthesia school **must:**

- Have a written guideline/criteria for selection of preceptors who are working at anesthesia practice sites and providing service (B 4.3.1)
- Ensure that the preceptors:
  - ♦ Are at least Bachelor of Anesthesia graduates with minimum of 2 years of service in the specific area; during sessions at the four clinical practice sites, a specialist/medical practitioner in the respective ward can be assigned as preceptor (B 4.3.2)
  - ♦ Have a current license to practice anesthesia (B 4.3.3)
  - ♦ Maintain competency by completing relevant CPD courses (30 CEUs/year) (B 4.3.4)
  - ♦ Have formal training for clinical teaching (B 4.3.5)
- Ensure that the preceptor-to-student ratio for practice experience is sufficient to provide individualized instruction, guidance, and evaluative supervision (B 4.3.6)

Quality Improvement Standards

The anesthesia school **should**:

- Establish a mechanism to support preceptors' CPD as educators and practitioners in line with their responsibilities in the program (Q 4.3.1)
- Implement incentive and recognition mechanisms for the preceptors (Q 4.3.2)

Annotations

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

Guideline for selection of preceptors should include criteria such as desire to teach; having adequate time, teaching skills, and excellent communication skills; and having a clearly documented role and responsibilities.

5. STUDENT ADMISSION AND SUPPORT SERVICES

5.1 STUDENT ADMISSION AND SELECTION

Basic Standards

The anesthesia school **must:**

- Have a written policy/guideline/document for student admission and selection that specifies:

  - Rationale, process of student selection, and minimum acceptance criteria/admission requirement according to the curriculum (B 5.1.1)

  - Course/credit exemption, course waiver (credits transfer), and substitution for non-generic students (B 5.1.2)

  - Existence of an entity responsible for student selection and admission that ensures transparency and fairness (B 5.1.3)

  - The process for transfer of students from other programs and institutions (B 5.1.4)

  - The process and criteria for selection of students with specials needs and from underserved populations (B 5.1.5)

  - The size of student intake in relation to its capacity and resource at all stages of the program (B 5.1.6)

  - A system for appeal for admission decisions (B 5.1.7)

- Ensure that the admission policy/guideline is in line with the institutional and national requirements (B 5.1.8)

- Ensure that student selection and admission process is transparent, free from discrimination, and in accordance with institutional polices and all applicable codes of laws (B 5.1.9)

- Be represented on the screening and selection committee/entity of the institution (B 5.1.10)

- Publish and disseminate to its constituency the admission policy and mechanism (B 5.1.11)

Quality Improvement Standards

The anesthesia school **should:**

- State the relationship between selection, the mission of the school, the educational program, and desired qualities of graduates (Q 5.1.1)

- Have a mechanism to assess the pre-entry knowledge, skill, and motivation of the applicants to be anesthetists, and use the result for selection of students (such as entrance exams and interviews, pre-exposure of the applicants to the actual professional practice, etc.) (Q 5.1.2)

- Have a system for student mobility, exchanges, and transfers, internationally (Q 5.1.3)

- Periodically review the admission policy/guideline and student intake in line with academic success of the students and the needs of the society in consultation with other relevant stakeholders and regulate it to the health needs of the community and society (Q 5.1.4)

Annotations

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

Admission criteria should include interest, pre-requisite knowledge and skills, background education, physical fitness, national exam grade requirements, and criteria for upgrading student 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 students and minorities.

5.2 STUDENT SUPPORT SYSTEMS

Basic Standards

The anesthesia school **must:**

- Ensure that anesthesia students have access to the following services:

    ♦ Counseling on academic, health, and social issues that could otherwise affect their success in the program (B 5.2.1)

    ♦ Student support addressing academic (e.g., remedial support, peer-assisted learning), social, and financial needs (B 5.2.2)

    ♦ Access to basic 24/7 clinic services (B 5.2.3)

- Have a mechanism for students to appeal on matters related to student support services (B 5.2.4)

- Ensure that new students are effectively oriented about the program, academic rules and regulations, and the student support systems (B 5.2.5)

- Ensure support to extracurricular activities like student associations for sport, gender, and HIV (B 5.2.6)

Quality Improvement Standards

The anesthesia school **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 student support services (Q 5.2.2)

- Ensure that anesthesia students have a student handbook that clearly indicates:

    ♦ Student support systems and how to access them (Q 5.2.3)

    ♦ Rights, responsibilities, and obligations of students in the school (Q 5.2.4)

    ♦ School profile: brief history, organizational structure, etc. (Q 5.2.5)

- Support establishment of charity clubs (Q 5.2.6)

Annotations

Academic counseling would include questions related to choice of electives, clerkship trainings, postgraduate specializations, and career guidance. Organization of the counseling would include appointing academic mentors for individual students or small groups of students.

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 STUDENT REPRESENTATION

Basic Standard

The medical school **must:**

- Formulate and implement a policy that ensures participation of student representatives and appropriate participation in the design, management, and evaluation of the curriculum, and in other matters relevant to students (B 5.3.1)

Quality Improvement Standard

The medical school **should:**

- Encourage and facilitate student activities and student organizations (Q 5.3.1)

Annotations

Participation of student representatives would include student self-governance and representation on the curriculum committee, other educational committees' scientific and other relevant bodies, as well as social activities and local health care projects.

To *facilitate student activities* would include consideration of providing technical and financial support to student organizations.

6 PROGRAM RELEVANCE AND CURRICULUM

6.1 PROGRAM RELEVANCE

Basic Standards

The anesthesia school/program **must:**

- Identify and address national health priorities, the needs of the society, the present and emerging role of the practitioner, and professional and legal requirements for practice (B 6.1.1)

- Be consistent with a basic scientific foundation (B 6.2.2)

Quality Improvement Standards

The anesthesia school **should**:

- Conduct a need/market assessment, in consultation with key stakeholders and international trends, to ensure that it addresses the priority health care needs of the society (Q 6.1.1)

- Ensure that the program is consistent with international standards of the profession (Q 6.1.2)

6.2 CURRICULUM MODEL AND INSTRUCTIONAL METHODS

Basic Standards

The anesthesia school **must:**

- Clearly define the curriculum model that enables the students to achieve the graduate competencies (B 6.2.1)

- Clearly state the instructional and learning methods employed in the curriculum based on contemporary education principles (B 6.2.2)

Quality Improvement Standards

The anesthesia school **should:**

- Organize the curriculum around sets of functions/competencies (competency-based) and oriented to professional practice, based on the future occupational practice of graduates (Q 6.2.1)

- Periodically review the curriculum to address societal needs and international developments in anesthesia practice (Q 6.2.2)

- Ensure that the curriculum has instructional methods that foster the ability of students to participate in scientific development and innovations (Q 6.2.3)

Annotations

Curriculum refers to the educational program and includes a statement of the intended educational outcomes, the content/syllabus, and experiences and processes of the program, including a description of the structure of the planned instructional and learning methods and assessment methods. The curriculum should set out what knowledge, skills, and attitudes the student will achieve.

Curriculum models would include models based on disciplines, organ systems, clinical problems/tasks, or disease patterns as well as models based on modular or spiral design.

Instructional methods encompass lectures, small-group teaching, problem-based or case-based learning, peer-assisted learning, practical, laboratory exercises, bedside teaching, demonstrations, skills training in the laboratory, field exercises in the community, and web-based instruction.

Contemporary educational principles would mean principles that:

- Stimulate, prepare, and support students to take responsibility for their learning
- Are student-centered and promote self-learning
- Prepare students to be professionals as well as lifelong learners

6.3 SCIENTIFIC METHODS

Basic Standard

The anesthesia school **must:**

- Throughout the curriculum teach:
  - ♦ The principles of scientific method, including analytical and critical thinking (B 6.3.1)
  - ♦ Clinical anesthesia research methods (B 6.3.2)
  - ♦ Evidence-based medicine (B 6.3.3)

Quality Improvement Standard

The anesthesia school **should:**

- Include in the curriculum elements of original or advanced research and ensure that students engage in research activities (Q 6.3.1)

Annotations

To *teach the principles of scientific method, medical research methods, and evidence-based medicine* requires scientific competencies of teachers. This training would be a compulsory part of the curriculum and would include that anesthesia students conduct or participate in minor research projects.

Elements of original or advanced research would include obligatory or elective analytic and experimental studies, thereby fostering the ability to participate in the scientific development of anesthesia as professionals and colleagues.

6.4 BASIC BIOMEDICAL SCIENCES

Basic Standard

The anesthesia school **must**:

- Identify and incorporate in the curriculum:
  - ♦ The contributions of the biomedical sciences to create understanding of the scientific knowledge (B 6.4.1)
  - ♦ Concepts and methods fundamental to application in anesthesia practice (B 6.4.2)

Quality Improvement Standard

The anesthesia school **should:**

- In the curriculum, adjust and modify the contributions of the biomedical sciences to the:
  - ♦ Scientific, technological, and clinical developments and (Q 6.4.1)
  - ♦ Current and anticipated needs of the society and the health care system (Q 6.4.2)

Annotation

The basic biomedical sciences would include anatomy, biochemistry, physiology, immunology, microbiology (including bacteriology, parasitology, and virology), pathology or pathophysiology, and pharmacology.

6.5 BEHAVIORAL AND SOCIAL SCIENCES

Basic Standard

The anesthesia school **must:**

- Identify and incorporate in the curriculum the contributions of the behavioral sciences and social sciences, and professional ethics that enable effective communication, program-specific decision-making, and ethical practices (B 6.5.1)

Quality Improvement Standard

- In the curriculum, the anesthesia school should adjust and modify the contributions of the behavioral and social sciences as well as medical ethics to:
  - ♦ Scientific, technological, and clinical developments (Q 6.5.1)
  - ♦ The current and anticipated needs of the society and the health care system (Q 6.5.2)
  - ♦ The changing demographic and cultural contexts (Q 6.5.3)

Annotations

Behavioral and social sciences would—depending on local needs, interests, and traditions—include biostatistics, community medicine, epidemiology, global health, anthropology, psychology, sociology, public health, and social medicine.

Professional ethics deals with moral issues in anesthesia practice such as values, rights, and responsibilities related to anesthetists' behavior and decision-making.

6.6 ANESTHESIA SCIENCES AND SKILLS

Basic Standards

The anesthesia school **must:**

- Identify and incorporate professional anesthesia courses in the curriculum to ensure that students acquire sufficient knowledge and professional skills to assume responsibility after graduation (B 6.6.1)
- Ensure that a reasonable part of the program is spent in practicing the essential skills for anesthesia practice in relevant settings (B 6.6.2)
- Specify the amount of time spent in training in major professional courses (B 6.6.3)

Quality Improvement Standards

The anesthesia school **should:**

- Adjust and modify in the curriculum the contributions of the professional anesthesia courses to:

  - ♦ Scientific, technological, and clinical developments (Q 6.6.1)

  - ♦ The current and anticipated needs of the society and the health care system

    (Q 6.6.2)

- Structure the different components of the professional skills training according to stages of the study program and in a manner that ensures early exposure of students to practice (Q 6.6.3)

Annotations

Professional anesthesia courses include pharmacology for anesthetists, pre-anesthetic assessment, airway management, fluid electrolyte and acid base balance, regional anesthesia, critical care medicine, anesthesia for specialty areas (thoracic, neuro, orthopedic, endocrine, abdominal, reconstructive, and vascular), anesthesia for both extreme age groups, laws and ethical principles pertaining to practice, and the social and behavioral sciences in anesthesia.

A reasonable part would mean about one-third of the program.

Essential skills for anesthesia practice: Graduates from the anesthesia program must have an interest in health and a desire to assist individuals, groups, and populations in improving and enhancing health status, through the effective delivery of safe anesthesia and management of pain and critically ill patients. In addition, they need information-gathering skills, critical thinking, cognitive skills, and psychomotor skills. They must also demonstrate the emotional health required for full use of their intellectual abilities in the context of the physical, emotional, and mental demands of the program.

6.7 CURRICULUM STRUCTURE, COMPOSITION, AND DURATION

Basic Standards

The anesthesia school **must:**

- Describe the content, extent, and sequencing of courses and other curricular elements to ensure appropriate coordination between biomedical, behavioral, social, and professional subjects (B 6.7.1)

- Clearly define the balance between theory and practice (at least half of the training time is dedicated to practical teaching) (B 6.7.2)

- Ensure that the total duration of training, credit hours/ECTS (European Credit Transfer and Accumulation System) per semester and durations of practical attachments are clearly defined and consistent with the national standards (B 6.7.3)

Quality Improvement Standard

The anesthesia school **should:**

- In the curriculum:
  - ♦ Ensure horizontal integration of associated sciences, disciplines, and subjects (Q 6.7.1)
  - ♦ Ensure vertical integration of the professional sciences with the biomedical and the behavioral and social sciences (Q 6.7.2)
  - ♦ Allow optional (elective) content and define the balance between the core and optional content as part of the educational program (Q 6.7.3)
  - ♦ Define inter-professional educational opportunities (Q 6.7.4)
  - ♦ Ensure early and longitudinal exposure of students to a variety of practice sites and community-based practices (Q 6.7.5)
  - ♦ Describe the interface with complementary anesthesia practice (Q 6.7.6)

Annotations

Horizontal integration outlines the relationship between subjects taught at the same level of the program.

Vertical integration describes the process of taking information used at any one level and extending that through other levels of the program. It can also be used to articulate the relationship between fundamental, discipline-specific knowledge and professional practice.

Core and optional (elective) content refers to a curriculum model with a combination of compulsory elements and electives or special options.

Inter-professional educational opportunities refers to occasions when students from two or more health professions learn together during all or part of their professional training, with the object of cultivating collaborative practice for providing client- or patient-centered health care.

Complementary anesthesia would include unorthodox, traditional, or alternative anesthesia practices.

6.8 PROGRAM MANAGEMENT

Basic Standards

The anesthesia school **must:**

- Have a functional curriculum committee under the education development center, which has the responsibility and authority for designing, implementing, and reviewing the curriculum to achieve its intended educational outcomes (B 6.8.1)
- In its curriculum committee, ensure representation of students and staff from all units/course teams of the school/department (B 6.8.2)
- Periodically review and update the curriculum at appropriate intervals and based on emerging evidence and the needs of the society, students' performance assessment results, and feedback from students and other stakeholders (B 6.8.3)

- Communicate and ensure that the curriculum is available to staff, students, and other stakeholders (B 6.8.4)

- Prepare and implement an academic calendar that indicates dates of registration, course adds/drops, practical attachments, final exams, class ends, vacation, graduation, and other major events (B 6.8.5)

- Ensure that the average time for graduation is in line with the program standard (4 years for generic) (B 6.8.6)

Quality Improvement Standards

The anesthesia school **should:**

- Plan and implement innovations in the curriculum by its curriculum committee (Q 6.8.1)

- Ensure representation of other stakeholders on the curriculum committee (Q 6.8.2)

6.9 LINKAGE WITH ANESTHESIA PRACTICE AND THE HEALTH SECTOR

Basic Standard

The anesthesia school **must:**

- Ensure operational linkage between the educational program and the subsequent stages of training or practice after graduation (B 6.9.1)

Quality Improvement Standards

The anesthesia school **should:**

- Ensure that the curriculum committee seeks input from the environment in which graduates will be expected to work, and modifies the program accordingly (Q 6.9.1)

- Consider program modification in response to opinions in the community and society (Q 6.9.2)

Annotations

The *operational linkage* implies identifying health problems and defining required educational outcomes. This requires clear definition and description of the elements of the educational program and their interrelations in the various stages of training and practice, paying attention to the local, national, regional, and global context. It would include mutual feedback to and from the health sector and participation of teachers and students in activities of the health team. Operational linkage also implies constructive dialogue with potential employers of the graduates as a basis for career guidance.

Subsequent stages of training would include postgraduate training and continuing professional development (CPD).

7. TEACHING-LEARNING AND ASSESSMENT

7.1 TEACHING-LEARNING

Basic Standards

The anesthesia school **must:**

- Use contemporary teaching principles that stimulate, prepare, and support students to take responsibility for their learning including active learning methods, a student-centered approach, demonstration, and facilitative practice in the classroom, skills lab, clinical, and community practice setting (B 7.1.1)

- Ensure that instructors devote much of the time to work with students individually or in small groups to guide learners, facilitate learning, evaluate each student's performance, and provide timely feedback (B 7.1.2)

- Ensure that instructors effectively plan and prepare for teaching (B 7.1.3)

- Ensure that instructors use appropriate and relevant educational materials including national service delivery guidelines (B 7.1.4)

- Ensure the acquisition of knowledge, skills, and attitudes (KSA) for core competencies (B 7.1.5)

- Ensure that each course/module instructor provides a standardized syllabus for the course on the first day class and thoroughly discusses it with the students (B 7.1.6)

- Ensure that instructors prepare and use a session plan that contains session objectives, an outline of key points, questions, and other group activities, with needed materials for the students (B 7.1.7)

- Ensure that instructors identify and inform students about resources for in-depth reading on the session (B 7.1.8)

- Ensure that educational materials used during classroom and practical teaching are/have:

  - ♦ Content that agrees with the learning outcomes (content must be mapped with the learning outcomes) (B 7.1.9)

  - ♦ Up-to-date, factual, and technically correct (B 7.1.10)

  - ♦ Regularly revised (B 7.1.11)

- Ensure that instructors announce and use consultation hours to work with students individually or in small groups and support student learning (B 7.1.12)

- Prepare and implement a schedule for clinical practice/practical attachments (B 7.1.13)

- Have a mechanism to monitor and evaluate the teaching-learning process by instructors, preceptors, and students and use the results/feedback to improve learning (B 7.1.14)

Quality Improvement Standards

The anesthesia school **should:**

- Clearly define in the curriculum and demonstrate use of learning methods that may include:

  - ♦ Peer-assisted learning (Q 7.1.1)

  - ♦ Problem/case-based learning (Q 7.1.2)

  - ♦ Reflective learning using a portfolio (Q 7.1.3)

- ♦ Web-based instruction (Q 7.1.4)
- ♦ Field exercises in the community (community-based activities) (Q 7.1.5)
- ■ Offer students the opportunity for an early immersion and longitudinal exposure to clinical/practical experience and community-based learning under supervision of senior professionals (Q 7.1.6)

Annotations

Standardized syllabus is a document that contains all the basic information about the course. It should contain the course name and description, objectives, course logistics, teaching and assessment methods, course schedule that indicates the learning activities of each week/date, exam and assignment due dates, reading materials, course policy, grading system, and name and contact address of the course instructor.

Educational materials include handouts, textbooks, reference books, electronic learning media, and learning tools (SOPS, checklists, charts).

Schedule for clinical practice would mean a program that clearly indicates *duration* of attachment, names of students at each site, names of supervisors and preceptors for each group, rotation system, case presentation dates, and schedule of major activities. It should be prepared in consultation with the practice sites and communicated to supervisors, preceptors, and students before deployment.

Peer-assisted learning can be defined as the acquisition of knowledge and skills through active help and support among individuals of equal status or matched companions.

Problem/case-based learning is a teaching strategy in which students use "triggers" from the problem case or scenario to define their own learning objectives. Subsequently, they do independent, self-directed study before returning to the group to discuss and refine their acquired knowledge.

Reflective portfolio is defined as the collection of evidence that attests to achievement as well as personal and professional development through a critical analysis and reflection of its contents.

Web-based instruction is anywhere, anytime instruction delivered over the Internet or a corporate intranet to browser-equipped learners.

7.2 ASSESSMENT

Basic Standards

The anesthesia school **must:**

- ■ Have assessment policies/guideline that clearly define:
  - ♦ A range of assessment methods used for formative and summative evaluation (B 7.2.1)
  - ♦ The frequency and timing of exams (B 7.2.2)
  - ♦ Criteria for setting pass marks (B 7.2.3)
  - ♦ Grading, promotion, repetition, dismissal and re-admission, and number of allowed retakes (B 7.2.4)

- A system for appeal for assessment results (B 7.2.5)

- The quality assurance process for assessment practices (B 7.2.6)

■ Use a variety of methods for both knowledge and performance assessment:

- At least two of the following methods are used for knowledge assessment: oral exam, written exams (multiple-choice questions, essay, short answer), assignments, project works, case presentations, and seminars (B 7.2.7)

- At least one of the following methods is used for performance assessment: structured observation, review of the portfolio, and evaluation of tasks performed by students (B 7.2.8)

■ Administer both formative and summative assessment on a continuous basis and make sure that:

- The final exam of each course is comprehensive and accounts for not more than 40% of the total mark and the remaining is based on continuous assessment (B 7.2.9)

- Each instructor provides timely, specific, constructive, and positive feedback to students on the basis of assessment results (B 7.2.10)

- A mechanism is in place to provide special support to students with poor performance based on assessment results (B 7.2.11)

■ Ensure confidentiality and security of student assessment processes and assessment results/academic records (B 7.2.12)

■ Ensure autonomy of the school and its academic staff in the management of student assessment (B 7.2.13)

Quality Improvement Standards

The anesthesia school **should:**

■ Have an exam committee that ensures the validity and reliability of student assessment by:

- Ensuring that each method of assessment and exam questions are prepared as per the standard (Q 7.2.1)

- Supporting the staff to prepare a blueprint for each assessment to ensure that assessment methods match the learning outcomes and cover all portions of the course (Q 7.2.2)

■ Support staff to conduct item analysis and use the result for decision-making (Q 7.2.3)

■ Establish and run a functional exam bank (Q 7.2.4)

■ Use the following methods for performance assessment:

- Objectively structured practical exam (Q 7.2.5)

- 360-degree evaluation (Q 7.2.6)

■ Ensure that the majority (>50%) of written assessment items/questions test higher-order cognitive domains (Q 7.2.7)

■ Adjust the number and nature of examinations of curricular elements to encourage both acquisition of the knowledge base and integrated learning (Q 7.2.8)

■ Administer a comprehensive qualifying exam before students are deployed for internship/clerkship to prepare them for the national licensure exam (Q 7.2.9)

Annotations

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

Higher-order cognitive domains include application, synthesis, and evaluation.

Portfolio is a collection of papers and other forms of evidence that learning has taken place. It provides evidence for learning and progress toward learning objectives. Reflecting upon what has been learned is an important part of constructing a portfolio.

Validity is the ability of an assessment to measure what it is supposed to measure. Validity is not about the method but refers to the evidence presented to support or refute the meaning or interpretation assigned to assessment results.

Reliability is the reproducibility or consistency or generalizability of assessment scores. An assessment result is said to be reliable if students will get the same score if they re-take the exam.

Blueprint is a clear, written recipe for an exam that ensures all content (knowledge, skills, and attitudes) is covered fairly and the test is a balanced sample of all the learning objectives that students have to master.

Item analysis refers to a statistical technique that helps instructors identify the effectiveness of their test items. In the development of quality assessment and specifically effective multiple-choice test items, item analysis plays an important role in contributing to the fairness of the test along with identifying content areas that may be problematic for students.

Objectively structured practical exam is a performance-based exam. During the exam, students are observed and evaluated as they go through a series of eight or more stations. It allows assessment of multiple competencies. It is ***objective***, because examiners use a checklist for evaluating the trainees; ***structured***, because every student sees the same problem and performs the same tasks in the same time frame; and ***practical,*** because the tasks are representative of those faced in real, practical situations.

360-degree evaluation consists of measurement tools completed by multiple people in a student's sphere of influence. Evaluators usually are faculty, other members of the health care team, peers, patients, families, and community members. It can be used to assess interpersonal and communication skills, teamwork ability, management skills, decision-making professional behaviors, and some aspects of patient care.

Encouragement of integrated learning would include consideration of using integrated assessment, while ensuring reasonable tests of knowledge of individual disciplines or subject areas.

8. STUDENT PROGRESSION AND GRADUATE OUTCOMES

Basic Standards

The anesthesia school **must:**

- Have a mechanism to monitor student performance and progress regularly (B 8.0.1)

- Trace level of and reasons for student attrition and take actions to minimize it (B 8.0.2)

- Ensure that the final qualifications achieved by the graduates are in line with the formulated and expected learning outcomes/graduation profile of the program (B 8.0.3)

Quality Improvement Standards

The anesthesia school **should:**

- Have a system to link the program and potential employers and facilitate graduate employment (Q 8.0.1)

- Have a mechanism to trace employability, performance at the workplace, and satisfaction of its graduates/employers and use the findings to influence the curriculum (Q 8.0.2)

- Implement strategies and programs to broaden the professional horizons of students and enhance their performance in areas such as scientific inquiry, scholarly concern for the profession, and the relevance and value of research through:

  - Inviting guest lecturers (Q 8.0.3)

  - Participating in curricular and extracurricular activities (Q 8.0.4)

  - Arranging panel discussions with senior experts in different areas of anesthesia practice (Q 8.0.5)

  - Supporting students and academic staff to participate in national and international scientific conferences (Q 8.0.6)

  - Organizing white coat ceremonies that welcome students into the profession of anesthesia (Q 8.0.7)

9. CONTINUAL QUALITY ASSURANCE

Basic Standards

The anesthesia school **must:**

- Have a functional internal quality assurance unit leading the quality assurance system with clearly defined duties/responsibilities and lines of communication (B 9.0.1)

- Allocate an adequate budget to the quality assurance unit to carry out its responsibilities (B 9.0.2)

- Assign a qualified person to lead the unit (minimum of 2 years of teaching experience, training in educational quality assurance, and training in teaching and assessment of health care providers) (B 9.0.3)

- Conduct quality assessment using the internal quality standard tool (at least annually), and develop and implement clear strategies/work plans to fill the gaps identified (B 9.0.4)

- Have a system for regular curriculum evaluation and review (at least every 5 years) (B 9.0.5)

- Establish a system and seek external quality audit and verification by HERQA or peer institutions and work on the recommendations given to ensure continual quality (B 9.0.6)

Quality Improvement Standards

The anesthesia school **should:**

- Have a well-organized, functional, and vibrant internal quality assurance unit that is responsible for monitoring and evaluation of input, process, output, and impact of the educational program (Q 9.0.1)

- Systematically seek, analyze, and respond to teacher and student feedback. (Collect student and instructor comments using a structured questionnaire or suggestion book, take corrective action, and document) (Q 9.0.2)

- Conduct external verification by peer institutions/schools every 2 years (Q 9.0.3)

- Conduct review meetings with representatives from practice sites, industries, and professional bodies annually to evaluate the effectiveness of learning experiences (Q 9.0.4)

- 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 9.0.5)

10. RESEARCH AND DEVELOPMENT, AND EDUCATIONAL EXCHANGES

Basic Standards

The anesthesia school **must**:

- Formulate and implement a staff development policy that allows a balance of capacity between teaching, research, and service functions (B 10.0.1)

- Have a clearly set research agenda for academic staff as well as students in line with the country's priority health care and developmental needs (B 10.0.2)

- Allocate a sufficient budget to support research and staff exchange (B 10.0.3)

- Ensure that each academic staff member as a part of a research team undertakes research and publishes one article in national/international journals at least every 2 years (B 10.0.4)

- Ensure that the research findings of the school are used to improve learning, community services, and program and professional development (B 10.0.5)

- Allocate faculty time for consultation and budget for students' research/directed studies (for transportation, data collection, chemical/reagent purchase, and stationery) (B 10.0.6)

Quality Improvement Standards

The anesthesia school **should**:

- Have thematic research areas in line with the country's priority health care and developmental needs (Q 10.0.1)

- Ensure that each academic staff member as a member of a research team undertakes research and publishes at least one article in a reputable journal every year (Q 10.0.2)

- Formulate and implement a policy for national and international collaboration with other educational institutions, industries, and research centers (Q 10.0.3)

- Facilitate regional and international exchange of staff and students by providing appropriate resources, and ensure that the exchange is purposefully organized, taking into account the needs of staff and students (Q 10.0.4)

- Support active participation of staff in relevant professional conferences, seminars, workshops, and other academic activities at national and international levels so as to improve education and research (Q 10.0.5)

ANNEX 1: SKILLS LAB EQUIPMENT/MATERIAL

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

SN		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	
1.	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 ETCO2	01 piece	
2.	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	
3.	c)	16/18G tuohy needle for epidural anesthesia	10 pieces	
	d)	Sponge forceps/ artery	10 pieces	
	e)	Bandage	01 roll	

SN	List of Equipment		Quantity	Remark
	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: BACHELOR OF SCIENCE ANESTHESIA PROGRAM GRADUATION PROFILE

- Organize pre- and postoperative management in relation to anesthesia.

- Conduct regional and general anesthesia.

- Operate and keep anesthetic apparatus in working order and monitor equipment and have emergency drugs ready at all times, in appropriate order, to manage an emergency situation.

- Manage and participate in intensive and recovery room care.

- Participate in, promote, and advocate for the education of patients and the community about the importance of anesthesia.

- Provide regular drills on intubations, cardiopulmonary resuscitation, and other emergency management activities for all interfacing cadres.

- Take responsibility for stocking, care, and use of all anesthetic drugs in an appropriate way.

- Function within a legal and ethical framework, accepting responsibility and accountability for one's own practice.

- Recognize personal and professional attributes, demonstrating ability to interact with others on a professional level.

- Perform a pre-anesthetic review, including laboratory, radiology, and any other relevant additional diagnostic data.

- Utilize appropriate principles of basic and behavioral sciences in protecting oneself, patients, and other health workers from iatrogenic complications.

- Produce and keep anesthetic records and reports in appropriate areas.

- Function as a team leader in different managerial areas or function effectively as a member of the clinical health team and appreciate the role of other health care professionals.

ANNEX 4: REFERENCE BOOKS FOR BACHELOR OF SCIENCE ANESTHESIA PROGRAM (SUGGESTIONS NOT LIMITED TO)

SN	Course List	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	• 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, *Pharmacology in Nursing*	
15	Health System Management	On Being in Charge: A Guide for Middle Level Management Stoner. Principles of Management	As of 2000
16	Human Nutrition	Tefera, B., Human Nutrition for Health Science Students	As of 2000
17	Communicable Diseases	Manson's Tropical and Infectious Diseases	As of 2000
18	Health Education	Pender, Murdaugh, and Parsons, Health Promotion in Nursing Practice	As of 2000
19	Introduction to Nursing Art	Craven, R. F. and Himle, Fundamentals of Nursing Luckmann and Sorenson, Basic Nursing	As of 2000
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	As of 2000
23	General Surgery	Smeltzer, S. C., and Bare, B., Brunner and Suddarth's Textbook of Medical Surgical Nursing	As of 2000
24	Obstetrics and Gynecology	Myles, M., Textbook of midwives, ELBS	As of 2000
25	Pediatrics	Marlow, D., Textbook of Pediatric Nursing	As of 2000

SN	Course List	List of Textbooks Required for the Course	Year of Publication
26	Radiologic Image Interpretation		
27	Professional Anesthesia Courses and Practices	• 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	As of 2000 As of 2000 As of 2000 As of 2000 As of 2000 As of 2000 As of 2000 As of 2000 As of 2000

ANNEX 5: DICTIONARIES AND ENCYCLOPEDIAS

A. PROGRAM/SUBJECT-SPECIFIC DICTIONARIES

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

B. PROGRAM/SUBJECT-SPECIFIC ENCYCLOPEDIAS

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

ANNEX 6: INDICATIVE SOURCE OF EVIDENCE FOR VERIFICATION OF STANDARD

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

- School/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 school, departmental/unit, and different standing committee levels

- Interviews with management staff, school leader, department/unit heads, administrative/ academic staff, and student representatives

- Staff statistics

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

- Document on asset inventory

- Interviews with school leader, librarian, department heads, academic staff, coordinator of experiential program, students, and administration staff

- Observation/survey of offices, classrooms, computer lab, skills lab, library, storage 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

- Documents on 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, school, and standing/ad-hoc committee level

- Interviews with senior management, deans, department heads, coordinator of the experiential training, academic staff, and student representatives

- Guidelines and tools for experiential training/placement evaluation

- Staff statistics

- Student enrollment data

- Lecture timetable

- Filled-in staff appraisal form

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

- Student handbooks

- Documents on student counseling; career guidance, etc.

- Student enrollment statistics

- Student admission policy/guideline

- Policies on student transfer, credit transfer, course exemption, and waiver

- Interviews with senior management, dean of students, student council, students, and academic and administration staff

- School website

- Infrastructure for student support services (clinic, sport, and lounge, etc.)

- Documentation on announcements about admission

- Documentation on appeal mechanism

- Documentation on orientation program

- Documentation on tutorial and supportive courses

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, school/institute level

- Curriculum review reports

- Course catalogs (showing the structure and aims of each program, course aims, descriptions, indicative activities, and book lists)
- Interviews with senior management, school leader, 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/school
- 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: Student progression and graduate outcomes

- Registrar's office reports
- Data on student 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 students 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 Audit manual for pharmacy 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/student 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

- Reports and dissemination documents of research findings of academic staff/students

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 Bachelor Program, HERQA, August 2012, Ethiopia.

3. National Harmonized Modularized Curriculum of Degree of Bachelor of Science in Anesthesia, Addis Ababa, 2013 GC.

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. Scope of Practice for Health Professionals in Ethiopia, Food, Medicine and Health Care Administration and Control Authorities, 2014.

7. Standards for Accreditation of Nurse Anesthesia Educational Programs, Council on Accreditation of Nurse Anesthesia Educational Programs, 2014.

8. Standards for Assessment and Accreditation of Primary Medical Programs by the Australian Medical Council, 2012.