Federal Democratic Republic of Ethiopia Ministry of Health

Health Professionals' Competency Assessment and Licensure   Directorate

IMPLEMENTATION GUIDELINE

March 2019

Message from the Director

As compared to the WHO standard of health professionals to population ratio for developing countries, Ethiopia has wide gap yet and the government has been working to increase the number of health professionals by increasing the intake of health science colleges and by opening new institutions.

While this helped to reduce the gap we have compared to the standard, the quality of the teaching and learning process hence, the service provided by the professionals became an issue for different stakeholders and the government as well. For this reason and since licensure exams are widely practiced internationally in different countries to insure the quality of health service, the federal ministry of health took the initiative to launch licensure exam initiative within human resource directorate since July 2015. Since then two round pilot tests given and reports discussed with different stakeholders.

The initiative currently led by a directorate established for this purpose, which is composed of three case teams and has been doing different activities to strengthen the system and capacitate the directorate to implement the exam in wider range with a much better organization and quality. As part of this, different documents were prepared to help facilitate the exam process and create transparency and sustainability of the program.

In the preparation of this document and other manuals, different examining institutions and countries experiences were reviewed, highly valued experts from different higher teaching institutions and Jhpiego- Ethiopia were involved for whom my deep appreciation goes for and for the high commitment and hardworking of the staffs at the federal ministry of health.

To this end, I would like to call for a collaborative work of all stakeholders in the health sector to this initiative, which indeed has high contribution to quality assurance of the health service delivery and yet cannot be effective unless all relevant bodies put their hands together for its implementation and continuity.
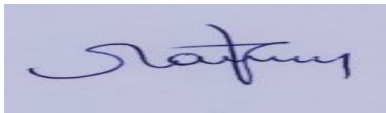
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Acknowledgements

This implementation guideline for health professional's licensure examinations is a contribution from several educators and concerned individuals with a genuine interest to propel Ethiopia's medical and health sciences education forward.

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Acronyms

ABSK-Applied Basic Science Knowledge

CK-Clinical Knowledge

COC-Certification of Competence

CS-Clinical Skills

DC-Disciplinary Committee

EC-Examination Committee

HPCALDHealth Professional's Competency Assessment and Licensing Directorate

FMOE-Federal Ministry of Education

FMOH-Federal Ministry of Health

GP-General Practitioner

HERQA- Higher Education Relevance and Quality Agency

HEIs- Higher Education Institutions

JA-Job Analysis

MPL-Minimum Pass Level

NEAEA-National Educational Assessment and Examination Agency

INSA-Information Network Security Agency

IRT-Item Response Theory

OSCE-Objectively Structured Clinical Examination

TVET-Technical and Vocational Education Training

TIF-Test Information Functions

WHO-World Health Organization

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Mission, Vision and core values

HPCALD's Mission:

To ensure that only competent, ethical, effective and trusted health care workers join the health workforce of Ethiopiathrough standardized assessment of all Health Professionals

HPCALDE's Vision:

To see a healthy, productive and prosperous Ethiopians through establishing a standardized assessment methods to all health professionals joining the health workforce of Ethiopia

Core Values:

*Professionalism:*To perform according to standards and professional conduct in executingthe responsibilities of the Directorate

*Accountability***:** To be answerable and be responsible for every act done

*Commitment***:** To be responsible and loyal to the organization so as to ensure productivity

*Integrity:*To show that the Directorate is honest and can be relied upon by all its stakeholders

*Confidentiality:*To maintain secrecy in examination related matters

*Collaboration:*To build strong partnership with similar organizations both in-country andabroad

*Team work:*To build strong partnership among staff to improve the Directorate's performance

Efficiency: To act competently in carrying out the Directorate's duties and responsibilities

Introduction

The Government of Ethiopia recognizes that healthcare is one of the crucial components of basic social services with direct linkage to growth and development of the country as well as to the welfare of the society. The quality of health care delivered in a country has an immediate and long-term impact on the quality of life, livelihood, morbidity and mortality of its citizens and on the nation's economy and its national security. Accordingly, the Ministry of Health is committed to reduce morbidity, mortality and disability aiming to improve the health status of Ethiopian people by providing and regulating health services.

As the sole entity charged with licensing and regulating health professionals in Ethiopia, the Ministry of Health has a responsibility to protect the public from incompetent, unprofessional, unsafe and unlawful practitioners and promote quality health care by ensuring that only qualified individuals receive a license to practice and deliver health care.

In its call for action to transform and scale-up health professionals' education, the World Health Organization asserted that no matter how many individuals are educated and deployed; health professionals cannot transform population health unless they have the necessary competencies. Hence, the World Health Organization recommended changes in regulation including certification and licensing of graduates. It is also known that many countries around the world verify competence and "fitness to practice" of health professionals by administering standard qualification, exit or licensure examinations.

Rationale for introducing the examination

In Ethiopia, graduating from a public or an accredited private higher education institution has so far been considered enough to verify competence and fitness to practice of health professionals. Obtaining a license has largely been an administrative function completed on the basis of review of education credentials obtained from training institutions.

Increasing public demands for quality and ethical health care, mushrooming of public and private higher education institutions that do not necessarily follow the same curricula and training rigor, the indefensible double standard of requiring graduates from technical and vocational colleges to pass a certification of competence exam (COC) as a precondition for employment. Global standards for better regulation combined with aspirations to produce health professionals that can compete at global stage have necessitated introduction of licensure exam for independent verification of competence and fitness to practice prior to granting a license.

In response to this, the Ministry of Health has established a case team as National Health Professionals' Licensing under the Human Resources Development and Administration directorate to introduce a Standardized National Licensing or Qualifying Exam in all public and private training institutions initially as a pilot on Medicine, Health Officers, Midwifery and Anesthesia graduates of 2007 E.C. Later on 2009 E.C it progressed to be an independent Directorate namely Health Professionals' Competency Assessment and Licensure Directorate (HPCALD) which scaled-up to include Generic Nursing profession and planning to incorporate other health sciences as well.

The Health Professionals' Competency assessment and Licensure Examination (HPCALE) is considered to be a critical step that should be undertaken before licensing new graduates of health professionals from all Ethiopian HEIs to provide health care services in the Country. The sole purpose of a licensing examination is to identify persons who possess the minimum basic knowledge and experience necessary to perform tasks on the job safely and competently not to select the "top" candidates.

The HPCALE will be conducted by Health Professionals' Competency Assessment and Licensing Directorate in coordination with the training institutions and other stakeholders. The

directorate has the ultimate responsibility to ensure that the examination meets technical, professional, and legal standards, in order to protect the health safety and welfare of the public by assessing candidates' abilities to practice competently. Once a candidate has passed a licensing examination, the directorate must be comfortable granting the license, thus assuring the public that the licensee is minimally qualified to practice at the time of initial licensure.

This guideline is organized in to three sections namely Exam Development, Exam Administration and Management and a separate section dedicated to Monitoring and Evaluation of the Examination program.

It describes the purpose, timing, format and overall implementation process of the competency assessment and licensure Exam for Health Professionals to ensure public safety and improve quality of health care and training. It will also help maintain consistency in the development and administration of licensure exams.

Goal

The ultimate goal of the licensure examination is to validate safe and effective practice, job-related skills and knowledge so as to provide an independent assessment and documentation of competency.

General Objective

To assess the clinical competence and performance of the candidate in terms of his or her knowledge, skills and professional attitudes for the safe and effective practice of all health professionals in Ethiopia.

Specificobjectives:

- To provide objective assurance that all those joining the health work-force have reached a common standard
- To bring consistency to the assessment of outcomes of all graduates from Ethiopian Higher Educational Institutions (HEIs) (both accredited private and public training institutions)
- To serve as a requirement for both Ethiopian and foreign graduates registration, issuing license to practice or, employment in the health system.
- To determine the suitability of a candidate to be trained as a future specialist- capable of practice in his/her specialty at the highest competency level
- To contribute an input for the quality improvement of HEIs in Ethiopia
- To give particular assurance to key interests, notably the public who express concerns about some aspects of the competence or behavior of new graduates.

Section I: Exam Development

The results of a licensure exam can have great consequences to students, higher education institutions, the Government and society. As such it is critical that identification and classification of examinees into those having the essential competencies for safe and effective entry-level practice or otherwise must be valid, reliable and defensible. Without evidence of validity and reliability, the credibility and fairness of decisions to provide or refuse license to practice could be challenged.

The purpose of development is to assure reliability and validity by following important steps such as Job Analysis, Exam Specifications and exam development process through applying an expertise made blue print.

- *Validity* is a measure of the extent to which an exam measures what it supposed to measure. In the context of a licensing exam, it refers to the extent to which interpretation of scores or assessment outcomes (pass or fail) for examinees taking the licensing exam at a given point in time are reasonable and supported by evidence. Some typical sources of validity evidence are: evidence of the content representativeness of the licensing exam (documented in a detailed exam blueprint based on task analysis), the quality of the exam (exam developed by qualified subject matter experts and adheres to evidence-based exam development principles), the reproducibility and generalizability of the scores, the statistical characteristics of the assessment questions or performance prompts, the statistical relationship between and among other measures of the same (or different but related) constructs or traits, evidence of the impact of assessment scores on students and the consistency of pass-fail decisions made from assessment scores.

Factors that affect validity in written examinations include:
- Too short exam to adequately sample the domain being tested, exam content that does not match the blueprint,
- Exam questions that assess low cognition level like recall while the curriculum objectives require application of knowledge or problem-solving,
- Items that are too easy or too hard or non-discriminating,
- Cheating/insecure exam, and indefensible passing score methods.

Factors that affect validity in performance examinations include:

- Too few cases to generalize,
- Unrepresentative cases,
- Rater bias,
- Flawed checklists/rating scales,
- Poorly trained standardized patients,
- Indefensible passing score methods

Understanding that validity is the most fundamental assessment principle, the NHPCLE shall collect validity evidence from multiple sources on an ongoing basis and re-evaluate them continually by allocating resources and working with teams of subject matter experts, psychometric experts and statisticians.

- ***Reliability*** refers to the consistency or reproducibility of assessment outcomes. It is a necessary but not sufficient condition for validity and is a major source of validity evidence for all assessments. Thus, it is a major quality index of assessment. Typical examples of threat to reliable measurement in performance examinations like OSCE are case specificity and low inter-rater reliability. Reliability coefficients can be calculated using generalizability theory analysis and intra-class coefficient.

Most educational measurement professionals suggest a reliability of at least 0.90 for very high stakes examinations such as licensure exam in medicine, which has major consequences for examinees and society. Reliability of assessments can be improved by using sufficiently large number of items, performance cases or raters, clearly writing exam items or performance prompts, and using test questions or performance cases that are of medium difficulty, and pretesting and exam banking. High pass/fail decisions reliability is essential for licensing examination. One can calculate 95 % confidence interval or precision of measurement around the pass/fail cut score to evaluate the accuracy of the pass/fail classification.The HPCALD shall pretest and bank effective exam items to improve their reliability striving for a reliability coefficient of 0.7 and above. In order to serve its purpose of evaluating knowledge, skills and

attitude of graduates and to ensure a desired level of competence for safe and effective practice, licensure examinations must be developed carefully and properly following rigorous standards.

The exam development process can thus be summarized into the following six basic steps with each step ensuring validity, reliability, and defensibility of the examination.

1.1 Task analysis

1.2 Exam blueprinting

1.3 Exam items development

1.4 Reviewing and validating exam items

1.5 Assembling and field testing exam items

1.6 *Standard setting*

1.1 Task Analysis

A task or job analysis is a systematic method of collecting data regarding the responsibilities, knowledge, skills and attitudes within a profession associated with acceptable performance. Conducting task analysis study is considered the foundation for developing a valid and legally defensible Health Professionals' Competency Assessment and Licensure Examination.

The purpose of task analysis is to systematically document the tasks that health care workers perform on-the-job; rather than relying only on curricular contents to define tasks performed by a specific cadre of workers.

The content of a licensing examination should closely relate to the tasks a health professional performs on the job. The most widely used method to determine work place requirements and currency is to conduct task analysis.

Task analysis involves two phases:

- Developing task list through review of documents and expert validation,

- Administering survey with a representative sample of entry-level incumbents.

Respondents rate each task statement with regard to both the importance of being competent in the given task for safe and effective practice and how frequently they perform the task in their

practice. Hence, findings from a task analysis study can be used as evidence-driven method to ensure that licensure exam content/blueprint is based on the current practice reality and priority knowledge, skill and attitude areas.

To ensure content validity of licensing exams, the HPCALD in collaboration with respective professional associations and stakeholders shall conduct task analysis studies every five years but may do it more often to keep pace with changes in healthcare services. It should target those health care cadres who graduated recently within the last 3-5years prior to the data collection period as thisgroup best reflects current practice. However, the exam blueprint shall be reviewed and enriched every year.

1.2 Exam Blueprinting

The second step in developing a valid, fair and defensible licensure examination is blueprinting. *A blueprint*, also known as a test plan or table of specifications, is a mechanism that guides systematic selection of a representative sample of the content and objectives of a study program. It assures congruence between competencies/learning outcomes expected to be acquired by graduates and the items that appear in the licensing examination.

Blueprinting is believed to reduce major threats to validity of the licensing examination arising from under-sampling or biased sampling of the curriculum content, too easy or too difficult exam items, and inappropriate choice of assessment methods.

The exam blueprint matrix for each professional category will include the following basic components:

- What are the major roles or domains of competencies for the particular health professional?
- What core health problems or issues and professional tasks should be assessed?
    - ✓ Core health problems or issues could be identified in relation to different body systems (e.g., cardiovascular system) or practice areas (clinical specialties), age (child, adultand elderly) and practice contexts (emergency, outpatient, and inpatient). E.g. Clinical tasks could be further sub-divided into history taking,

physical examination, clinical reasoning, investigations, diagnosis, treatment, counseling, health promotion and disease prevention and follow-up.

- What is the level of performance for each task?
  - ✓ The action verbs in the core competencies/learning outcomes specify the level of performance. Miller's Pyramid (Figure 1) can serve as a guiding framework. The lower two sections refer to the "knowledge" domain and the upper two refer to the "performance" domain. This framework is useful to select appropriate assessment methods. The knowledge assessment shall evaluate "knows how" (application of knowledge, clinical judgment and problem-solving) and "knows" but with the majority of questions focusing on the former. The performance assessment shall evaluate the "shows how" and "does".

- Which components of the task will be assessed?
  - ✓ Most tasks involve the three learning domains (knowledge, skill and attitude) but for some tasks one of the components may take priority over the others.

- What will be the test format?
  - ✓ The licensing exam shall include both written and performance assessments. The written examination will employ predominantly l scenario-based multiple choice questions (MCQ) to assess knowledge whereas for the performance (skill) assessment an objectively structured clinical examination (OSCE) shall be used. Multiple-choice questions and OSCE are the most accepted and widely used assessment formats in high-stakes examinations worldwide.
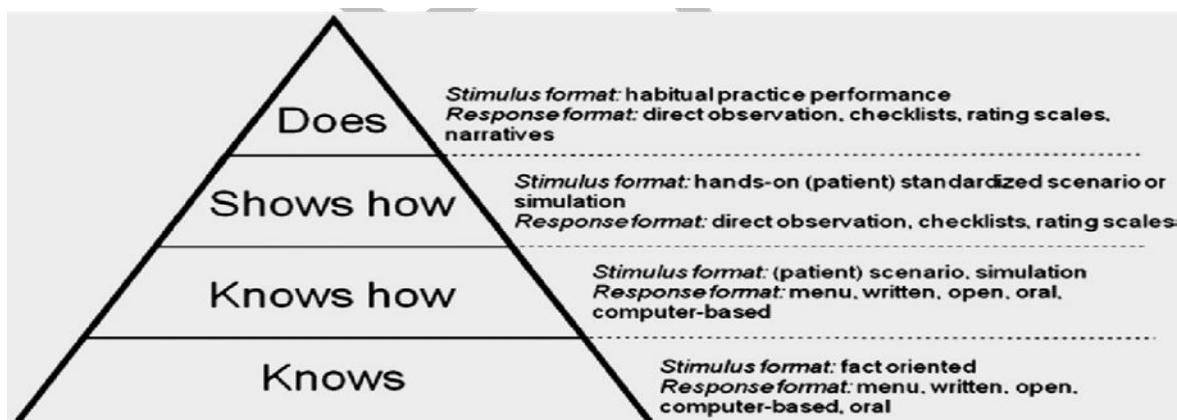
Figure1. Miller's Pyramid and types of assessment used for assessing the layers

The HPCALD shall organize a workshop where subject matter experts develop a detailed exam blueprint for each health professional category based on the exam content outline generated from the task analysis study (see sample exam blueprint formats on Tables 1&2). After the task analysis studies completed,the exam blueprints review and amendment will follow and some necessary adjustments can happen annually.

In recognition of the importance of both knowledge and skills for safe and effective practice, the licensing exam will have both knowledge and performance assessment components as described earlier. Both the written and performance assessments/OSCE will have their own cut-off scores and a candidate is expected to pass both formats independently before being granted an initial license to practice.Preferably the written exam shall precede the OSCE. However, The HPCALD may review and modify the exam formats and/or composition as the need arises.

To assure comprehensive sampling of content and high reliability, the licensing exam shall be of sufficient length. Written and performance assessment alike could last at least half a day for each candidate.

The MCQ items are mainly designed as clinical vignettes or scenarios based on real patient problems. Some of the MCQ items shall be constructed to assess comprehension of basic principles as applied to patient care. Each MCQ consists of a stem followed by four suggested answers or completions. The candidate is required to select the best answer to the question or the best response to the statement. These A-type MCQs aim to determine whether the candidate can differentiate the correct item of information, procedure, treatment or so on, from the plausible alternative.

Table 1: *Sample Exam Blueprint format for midwifery*

DOMAINS	WEIGHT (%)	ASSESSMENT	DIAGNOSIS	MANAGEMENT	EVALUATION
1. Preconception care	5	2	1	1	1
2. Family planning	10	3	2	3	2
3. Antenatal care	10	3	3	2	2
4. Intrapartum care	35	10	10	10	5
5. Post-partum Care	10	5	2	2	1
6. Neonatal and child care	10	4	3	2	1
7. Gynecologic and abortion care	10	4	2	3	1
8. Public health	10	---	-------	--------	------------
Total	100%				

Table 2: *Sample OSCE Blueprint for Medicine (alternative format)*

| | Program | | Competency Domains | | | | | | |
| | | | Communication | | Examination | | Procedures | | |
Category	Component	#Stations	HT	OC	PE	VSI	TP	DP	IATF
Internal Medicine	Cardiology	3	1		1				1
	Respiratory	3	1		1		1		
	Neurology	2			1			1	
Pediatrics	Nephrology	1	1						
	Endocrine	2	1		1				
Surgery	Gastro Intest.	1	1						
Obs Gyn	Hematology	1		1					
	Reproductive	2		1	1				
	Oncology	1	1						
TOTAL		16							

Communication: HT=Focused History Taking,**OC**=other communication.

Physical Examination: PE = Physical examination,**VSI**=Virtual Sign Identification.

Practical Procedures: DP=Diagnostic Procedure,**TP**=Therapeutic Procedure,**IATF**=Identification of Abnormal Test Finding.

1.3 Item Development

Once the blueprint is finalized, exam items matching the content area (learning outcomes) on the blueprint will be developed. Each item is linked through a classification system to the blueprint. The written examination will be composed of 150 to 350multiple-choice questions (MCQs)including pilot test items.The performance examination will have 8 to 12 OSCE stations based on the specific cadre of health professionals to be examined. The OSCE stations will minimize the use of real patients at all costs especially those with severe and emergency conditions. The HPCALD would rather advocate the use of models and standardized patients for clinical examinations.

Merely testing recall of factual knowledge is not the goal of the Health Professionals' Competency Assessment and Licensure Examination. Further enhancement of MCQs using multimedia (pictures of slides, photos etc…) shall be carried out with the introduction of computer-based exam administration.

Regarding the performance assessment, OSCE stations must focus on appropriate psychomotor skills at the 'shows how' level of the Miller's pyramid avoiding items that can be included in tests of knowledge.

Selection and Training of Exam Developers

The first step in exam development will be selecting exam developers. The HPCALD in collaboration with professional associations shall select subject matter experts (from different education institutions and health facilities across the country), health professions education experts and psychometric experts to develop the licensing examination.

To assure fairness, there shall be balanced institutional representation in view of the different curricula being implemented throughout the country. Different exam writing sub-groups shall be established based on disciplines (such as midwifery, health officer, and nursing) ordepartments (e.g., internal medicine, surgery, etc. for medicine). Exam developers are required to sign an examination security agreement protecting the confidentiality of all examination materials they have access to.

Standardized assessment training focused on basic assessment principles, developing (designing) and reviewing high-quality MCQs and OSCE stations shall be provided to all exam developers. The purpose of the training is to equip them with evidence-based exam development principles and enable them to develop high-quality MCQ items and OSCE stations. During the training, exam developers will also review findings of the task analysis study and develop or update respective exam blueprints. The training will culminate with an assignment for exam developers to construct a certain number of exam items and OSCE stations according to the test plan or specification outlined on the detailed exam blueprint on a retreat session organized by the HPCALD itself.

Guidelines for MCQs Item Development

- The question item must address important content typically a common or potentially catastrophic health problem. Each question should focus on one important concept.
- Most (preferably all) items should assess application of knowledge, not recall of isolated facts. Don't waste time testing trivial facts.
- Write a clear stem ensuring that the question can be answered without looking at the options ("cover the options" rule)
- Include as much of the item as possible in the stem; the stems could be long and the options short.
- Avoid superfluous information.
- Avoid "tricky" and overly complex items.
- Write options that are grammatically consistent and logically compatible with the stem; list them in logical or alphabetical order.
- Write distracters that are plausible and the same relative length as the answer.

- Avoid using absolutes such as *always*, *never*, and *all* in the options; also avoid using vague terms such as *usually* and *frequently*.
- Avoid "All of the above"
- "None of the above" should be used carefully and preferably avoided
- Avoid negatively phrased items (e.g., those with *except* or *not* in the lead-in). If you must use a negative stem, use only short (preferably single word) options.

Guidelines for developing quality objective structured clinical examination

- Identify learning outcomes and clinical tasks to be tested based on the exam blueprint
- Decide on a clinical problem, issue or activity that addresses each learning outcome or task
- Plan the details for the OSCE stations including number of stations per exam and the length of each station. Increasing breadth of content covered by increasing the number of stations in each examination improves the reliability of the assessment outcome while sufficiently long time at each station will improve its validity. But these must be balanced with feasibility and resource implications. We recommend that the number of stations in an exam be **8-12** and each station should last **5-15** minutes.
- Design each OSCE station following a standard template. Each OSCE station will have these components: stem, assessment rubric, information for the examiner, resource requirements, and training information for standardized patient (if applicable). The stem must clearly state the scenario and task to be completed by (instructions to) the examinee. (See "The OSCE manual" for details)
- Develop marking guidance or assessment rubrics (checklists and/or global rating scales). There is increasing preference for use of global rating scales over checklists when the examiners are experts. That being said, the examination committee will decide whether checklists, global rating scales or combinations are to be used for marking. The author of each OSCE station must develop the complete "station profile" as they write/develop the station.

- Write training information to standardized patients. If the OSCE would involve standardized patients, as it would likely so in the future, directions should use patient-based language, specify the patient's perception of the problem (for example, mild or severe pain), provide only relevant information, and specify pertinent negatives. Responses to all items in the checklist should be included. The patient's behavior and mood should be described in terms of body language and tone of voice. Symptoms and signs to be simulated should also be described.
- Piloting, psychometrically analyzing and banking OSCE stations.

1.4 Reviewing and Validating Exam Items

After a pool of exam items are developed, an important next step is to review them. The developed exam items shall be reviewed and validated by exam review committees for content relevance, technical accuracy, clarity and sensitivity. Subject matter experts as well as psychometric experts will do the review to ensure the items meet psychometric standards. Subject matter experts shall review the items to confirm that they are accurate, clearly stated, and correctly keyed using the checklist *(Annex 1 and 2)*. Psychometric experts shall review the items to ensure that they are not technically flawed. There should also be editorial review to check grammar, punctuation and spelling errors. Finally a sensitivity review will verify fairness to all examinees and absence of offensive material to any particular group. An oversight group shall make the final review once the items are put together in an exam form.

1. 5 Assembling and Field-testing Exam Items

Once the items are written, edited and reviewed, you are ready to assemble the exam. Based on the blueprint, a representative sample of predetermined number of exam items shall be compiled and assembled for the written and performance assessments separately by the HPCALD for each exam administration.

Considering the fact that licensing exam leads to a life altering decision, it is critical that the developed exam items are field-tested before use for pass/fail decision-making. Administering

licensing exam to university graduates is a new practice and experience from other countries dictates that piloting is extremely useful. The future goal is to field-test all the items in the examination pool with each exam administration.

This would help not only to further improve the quality of exam items but also to resolve unforeseen problems and allow institutions time to adjust their training based on diagnostic feedback.

Every year, it is expected that new exam items will be constructed and added to the exam bank. It is essential that all new items shall be pretested by embedding them in the licensing exam. The performance of the pretest items will be analyzed but will not be used for decision-making. If an item performs well, it will be kept in the bank. If an item is found to be poor, it will be revised and field tested again or may be rejected if it is unsalvageable. Results of the pretest shall be reviewed in a workshop or by exam developers.

Once exam items are field-tested (piloted or pretested), they should be reviewed to determine if they performed as intended. The HPCALD shall conduct statistical analysis of the exam using test development software. Thorough test analysis requires two levels of analysis: overall analysis of the exam and a detailed analysis of each item on the exam.

Overall exam analysis gives the big picture and typically includes the following statistical indicators:

- Number of items in the exam, number of examinees, measures of central tendency (mean, median),
- Measures of variability (range, standard deviation, variance),
- Standard error of measurement,
- Reliability coefficient,
- Mean difficulty index,
- Mean discrimination index (point biserial index),
- Score distribution/histogram.

Once the big picture is examined, statistical analysis of each item on the exam must be done. This analysis includes item difficulty, and item discrimination, generating response proportion (P-value) and point biserial index for the correct answer and each of the distracters for every item.

The measures of central tendency are designed to provide a single value that best represents the typical score in an examination. Extreme mean values should be investigated. If a licensing exam has a very low mean, it may indicate too difficult exam and/or poor quality of education. If a distribution is positively skewed, meaning that the exam is very difficult for the group with most scores at the low end of the distribution and very few high scores, the mean is higher than the median and may signal problems in the quality of education. The variance and standard errors measure the dispersion of scores around the mean. The smaller these indices are, the greater the similarity of the group. The most useful application of the standard deviation is to help understand the reliability and standard error of measurement. The larger the score variability is, the higher the reliability of scores.

The reliability coefficient is an index of the consistency of the test scores, ranging from 1.0, which is perfect consistency, to 0.0, which indicates absence of reliability. While a reliability coefficient of 0.7 and above may be acceptable, a very high reliability (greater than or equal to 0.90) is desirable for a licensing exam. One must take factors that affect reliability into account in interpreting reliability coefficients. These include quality of test items, item difficulty, item discrimination, homogeneity of the test content, homogeneity of the test group, test length, number of examinees, and test administration and scoring. Low reliability coefficients are often due to poorly constructed items, an excess of very easy or very difficult items, or test items that do not represent the blueprint. If extraneous factors interfere with or improve students' performance on the exam or their score, such as cheating, their scores will not reflect their true ability.

Standard error of measurement (SEM) is an estimate of the possible amount by which a score can differ from the true score, based on errors in measurement. The larger the SEM is, the less reliable the score. The important message is raw scores do not represent examinees' true scores.

One must look at the margin of error of a given licensing exam and be flexible when translating raw scores into licensing exam scores and licensing exam scores into pass or fail decision.

Difficulty index (p-value) is the percent of correct responses to an item. It is obtained by dividing the sum of those who answered the item correctly by the total number who took the exam. Good test items have p-values between 0.30 and 0.80. Items that are answered correctly or incorrectly by more than 85 % of the examinees have poor discrimination power.

Discrimination index or point biserial index is the best indicator of quality of a test item. It identifies the capability of the item to differentiate between high scorers and low scorers. The index ranges between -1.0 to +1.0. The higher the index is, the better the test item. The higher the mean discrimination ability is, the higher the reliability coefficient of the exam will be.

A positive discrimination index indicates more students in the highest scoring group answered the item correctly than those in the lowest group. A negative index means that more low scorers than high scorers answered the item correctly. An item with a PBI above 0.40 and p-value between 0.60 and 0.85 has a very good discriminating ability. Finally, it is important to note that both difficulty level and discrimination index should be reviewed for a complete understanding of quality of an item. The statistical information from a test item analysis is an invaluable tool for interpreting test results and improving your items for future use. However, it should be noted that exam analysis statistics should not be interpreted dogmatically. The qualitative review of the items is equally important and decision should be made using both the quantitative and qualitative data.

A graphic representation of a score distribution using histogram provides the clearest visualization of a set of exam scores of a given group. The results of most tests will approximate a normal curve when they are administered to large numbers of examinees. The score distribution is an important indicator if further investigation of exam scores is warranted.

Exam pool maintenance is an ongoing activity, with new items pretested and added to the bank continuously. Good quality exam items with their associated statistics shall be systematically organized and stored electronically in the exam bank at the HPCALD following the blueprint

architecture. Collection of items in an electronic exam bank facilitates storage and retrieval of items when needed, provides a systematic approach for using item analysis data to improve existing items, and provides models for constructing quality items. There are software programs that manage filing, sorting, storing, retrieval, statistical analysis, and updating of items. As new items are added, others will have completed their service and will be ready to retire. The shelf-life of each exam item shall be ten years, after which it will be removed from the exam bank and released to the public.

1. 6 Standard setting

Standard setting is the process of defining or judging the level of knowledge and skill required to meet a typical level of performance and then identifying a score on the examination score scale that corresponds to that performance standard.

The standard setting process is designed to translate a conceptual definition of competence to an operational version, called the passing score. Verifying the passing score is another critical element in collecting evidence to support the validity of test score interpretation. The assumption is usually made that scores obtained from assessments provide an indication of a student's ability to ''use the appropriate knowledge, skills, and judgment to provide effective professional services over the domain of encounters defining the area of practice''.

Standards set by determining the amount of test material that must be answered (or performed) correctly in orders to pass are absolute standards. Absolute standard setting approaches are more commonly used in credentialing examinations (i.e. licensure or certification).

The Modified Angoff (1971) model, an absolute standard setting approach, employs a test-centered approach and is known for its wide use in educational testing and performance assessment. Raters using the Modified Angoff method estimate the difficulty of each item for a hypothetical group of "minimally competent" examinees, usually by estimating the proportion of such a group that would answer the item correctly. The estimated cut-off score for a judge is calculated by summing the item difficulty estimates.

The Modified Angoff procedure will be used to set the standards for pass/fail decisions using a Minimum Pass Level (MPL) for the Licensure exam. Briefly, a group of judges (7-15) or "expert raters" who are practitioners working at health facilities and subject matter experts will estimate

the percentage of borderline examinees who would answer each examination item correctly. A suitable mix of panelists based on gender, discipline (e.g. pediatrics, general medicine), and professional activity (e.g. faculty vs. practicing physicians) should be considered. The more panelists there are, the more likely it is that the resulting passing score will be stable. The approval of the standard setting will be done by the NHPCLD and Higher officials of the MOH.

The items for each exam are rated individually by the Modified Angoff panelists considering the probability of a borderline examinee to answer each item correctly. The average rating of all items in an examination gives the pass score set by a Modified Angoff judge/panelist. The pass/fail standard of the examination will then be the average percentage of minimum pass indices (MPL) of all the judges or Modified Angoff panelists.

An example of Modified Angoff Method for 5 Judges (raters) and 10 Items is shown in the table below. For instance, on the Modified Angoff table below, rater 1 and rater 3 have significantly discrepant ratings (0.90 Vs. 0.65 for item #1). Such raters will be asked to put forward their arguments to defend their ratings triggering a focused discussion on the item involved possibly culminating in adjustment of the rating by one or both raters. The other raters can also adjust their ratings if convinced by the foregoing discussions.

Understanding the minimum competency achieved by a borderline examinee and reaching a consensus among judges (raters) to ensure inter-rater consistency is a challenging task. Discussions should be allowed to determine minimum-competency criteria for the borderline examinee or describe important attributes (in terms of knowledge) of the borderline examinee among Modified Angoff panelists.

After the individual rating is done for each item the panelists are requested to discuss on discrepant ratings (>15% variation in rating) among them on each item. These focused explanations would help clarify a judge's stand and help adjust erroneous ratings. However, a judge could retain his or her initial ratings if not convinced.

The standard setting workshop is organized and led by the convener of the HPCALD team.

- ***The most defensible passing score is one that is established prior to the administration of the examination.***

The passing score or "cut- score" should be based on minimum competence criteria developed by practitioners. Adoption of the passing score may ultimately result in the licensure of candidates who have sufficient knowledge and experience to ensure public health and safety.

Table 3 : Modified Angoff Method for five Judges (raters) and 10 Items

Items	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5
1	0.90	0.85	0.65	0.50	0.80
2	0.75	0.80	0.55	0.70	0.80
3	0.80	0.85	0.60	0.85	0.70
4	0.65	0.60	0.45	0.65	0.60
5	0.55	0.75	0.45	0.65	0.55
6	0.60	0.55	0.35	0.75	0.60
7	0.750	0.60	0.40	0.80	0.55
8	0.80	0.75	0.60	0.50	0.75
9	0.65	0.65	0.50	0.45	0.45
10	0.80	0.70	0.65	0.90	0.85
Cut score (MPL) for each judge	0.725	0.710	0.520	0.675	0.665
Final Cut-off score					0.659

Setting standards for performance assessment Extended Modified Angoff method:
Hambleton and Plake's (1994) Extended Modified Angoff method is an extension of the Modified Angoff method described earlier. That is, raters provide their expectations of the score of a minimally competent examinee on each dimension for which scores are generated.

The Modified Angoff method is extended by allowing raters to weigh the skills according to their perceptions of the relative importance of each skill. Cut scores are established by multiplying the ratings by the weights and summing the resultant values.

Scoring OSCE Stations

In any given station, all candidates' positive responses per skill are summarized and divided by the highest possible score and multiplied by 100 to produce a station skill percentage score. The total test score is calculated by averaging the station scores across all stations. The standard shall be set on the total test score, which is the average performance across stations, such skill standard constitutes a compensatory standard.

This method of scoring permits candidates to compensate for relatively poor skill performance on some stations any combination of performance (skill scores) across the stations is acceptable, as long as the examinee exceeds the skill performance standard for the total test. The HPCALD shall use this method of scoring whilst scoring OSCE stations.

Acceptable test reliabilities are attained with careful choice of optimal number of stations, which allow generalization to other clinical cases. Standards should be set on reliable scores to avoid problems of decisions inconsistencies and candidates' misclassifications. The number of OSCE stations for Licensure Examinations ranges 8-12. The Health Professionals' Competency Assessment and LicensureExamination shall include a maximum of about 12 OSCE stations.

The HPCALD recognizes the inherent weaknesses and strengths of the various standard setting methods. Hence, efforts will be made to ensure that the most appropriate method is being used.

Methods based on the evaluation of test content are popular. Among the advantages of these methods are:

a) Cut scores can be estimated prior to the administration of tests,
b) Familiarity with groups of examinees (not specific individuals) is the basis upon which judgments are made, and
c) The rating tasks tend to be straightforward

However, the methods also have drawbacks. Estimating performance on individual items is difficult. Most raters are not able to estimate item level performance with great accuracy. Another drawback of the methods is that they do not provide data on expected pass rates or

misclassification errors. There is no way to evaluate the results of the individual judgments to determine their "accuracy."

In light of these important considerations the Modified Angoff Method shall be used as a standard setting method for all licensure examinations administered by the Directorate.

1.7 Item Banking

An item bank, a robust repository of test questions and the components that make up those questions, is critical to keeping exam content secure and fresh. By developing a bank of well-written items and managing the careful construction of exams, professional test developers can create tests that accurately measure the knowledge, skills and abilities necessary for competence. To ensure that enough quality items pass the review and validation process, at least three times as many items need to be developed and stored in an item bank for all exam components.

A standard item banking system (software) provides test developers and subject matter experts (SMEs) a set of tools to facilitate the writing, review, editing and selection of test questions. An excellent item banking system also provides the automation, standardization, and scalability essential to developing and maintaining effective tests. Computerized item banking employs a computer software program to store collections of test items and their associated classifications and statistics. Computerization allows easy storage and retrieval of hundreds or thousands of items.

A well organized, well-maintained computerized item bank can facilitate and enhance the construction of both paper-and-pencil and computerized tests. The basic plan for item bank construction includes writing content valid, grammatically correct items. Categorizing items according to the content outline or "blueprint" that the testing agency utilizes, and entering the items into the computerized bank. Test items will undergo a rigorous review and editorial process as well as field testing before they can be deposited in an item bank.

In order to rapidly build the Item Pool, the HPCALD shall receive exam questions from SMEs and other credible experts/instructors as appropriate. However, item developers are expected to sign an Exam Security Agreement and abide by the rules of the HPCALD with regards to overall

exam security. Items shall be reviewed and edited by a Panel of Experts or Exam Committee at the HPCALD.

Certain item writing methods and approaches could be used to develop the initial item pool effectively and efficiently. Some of the methods are described below and the HPCALD shall use one or a combination of these as deemed appropriate.

1. *Objectives-based methods*

All objectives-based item-writing methods start with a statement pertaining to an important aspect of knowledge or skill. These statements should emerge from the job analysis procedure selected to support the design of the licensure examination. This approach relies on content analysis of scenarios describing details of professional situations located in the practice model. These objectives need to be evaluative objectives as broad enough to encompass a set of at least 10 related items. Such objectives may be thought of as domain descriptions. In this context, item writing becomes part of domain-referenced test construction (Baker, 1974). What is crucial to effective objectives-based item writing is making explicit connections between the language of the objective and the words comprising the item. Examples of objectives-based items are shown below.

> *Example*
>
> *Encounter: Diabetes mellitus*
>
> *Objective: Recognizes new signs and symptoms in patient with established diagnosis   A 55-year old man has had insulin-dependent diabetes mellitus for most of his life. He is in the hospital recovering from a gastrointestinal operation and he is receiving regular insulin on a sliding scale. He has no glycosuria, but he has persistent ketoneuria. What is the most appropriate management?*
>
> *A.   Increase the dose of insulin*
>
> *B.   Decrease the dose of insulin*
>
> *C.   Increase his caloric intake*
>
> *D.   Decrease his caloric intake*
>
> *E.   Substitute an oral hypoglycemic drug*

2. *The lead-in method*

This method doesn't stand on its own but rather shall be used together with the above method. The *lead-in* is the name given to the sentence or phrase that ends the item stem. Functionally, the lead-in puts the question to the examinee. Therefore, the lead-in serves as the direct link between the evaluative objective and the test item. A lead-in may be in the form of a question (" *What is the most likely diagnosis?* "), or it may be in sentence-completion form. For example, if the objective relates to knowledge of appropriate diagnostic tests, then one reasonable lead-in might state, *"The most appropriate diagnostic study is …"* It is recommended that one or more lead-ins be prepared when objectives are developed. Writing test items using evaluative objectives and lead-ins should proceed as follows:

1.   Identify a clinical problem and a related objective.

2.   Select a specific lead-in that is associated with the assigned objective. If available, sample items should be provided as additional aids to effective item writing.

3.   Confirm that the item's lead-in poses the question that relates to the referenced evaluative objective.

4.   Write an appropriate stem preceding the lead-in addressing the selected clinical problem and including sufficient clinical detail (e.g., patient age, history, complaints, history).

5.   Write the correct answer and distractors that are logically and grammatically consistent with the lead-in

> ### *Examples of lead-in Method:*
> *Objective 1: Recognizes indications for use of medications or prophylactic drugs or vaccines (e.g., drug of choice)*
> • *The most appropriate pharmacotherapy (for specific patient) is………….*
> • *In managing a patient with (condition), the medication most appropriate is*

3. The Item Modeling Method

Pioneered at the National Board of Medical Examiners (NBME) in the US, this method is helpful when the goal is rapid expansion of a small item pool. This is commensurate with the existing situation of the HPCALD and a highly regarded method as there is a need to build the item pool as fast as possible with high-quality items.

Item modeling produces large numbers of items, but in a limited content area. Item modeling is more successful with MCQs that have longer stems, especially clinical vignettes. Modeling basic science items has been less successful.

Item Modeling Process: Preparing Modeling Specifications

1. Select a source item. It should be a well -written MCQ, preferably a clinical vignette, on a topic for which you want additional items. Use a single-best choice (A-type) with 4 or 5 options as the source item.

2. Highlight the specific terms in the stem that are important clinical content, (e.g., clinical setting; patient age, sex, and race; medical history; presenting complaint(s); signs and symptoms; and results of diagnostic studies).

3. Identify the correct (keyed) response, and the content category to which it belongs. For example, the answer to the question may be a diagnosis; a follow-up diagnostic study; a decision to admit the patient to the hospital; a referral; a modification in the patient's medications; etc…

4. Review the available wrong options (distracters), and discard any that are inconsistent orflawed. List additional plausible alternatives, and, if possible, stipulate rules for combining choices in new items. These "destructor rules" should guide item writers by delimiting options that should, or should not, appear together.

5. For each clinically important term in the stem, list several significant alternatives. Thealternatives should be "differences that make a difference" in the clinical context.

> *For example, how would the clinical situation be different if:*
> a) *The patient was a young child instead of an adult?*
> b) *If the patient were a woman instead of a man?*
> c) *If the patient had significant family history of disease?*
> d) *If the diagnostic studies produced different result*

6. Preparecomplete specifications for each new item. Identify the content of the new stem by labeling one clinically reasonable combination of the alternatives. Then, for each new stem, identify or provide a keyed response. Finally, for eachkeyed response,specify the desired destructor rule.

Table 4: *shows a sample specifications table for a modeling procedure.*

STEM ATTRIBUTES				OPTION ATTRIBUTES		
PATIENT	**SYMPTOMS**	**PHYS EXAM**	**STUDIES**	**OPTIONS**	**KEY**	**DISTRACTORS**
0. 10-yr-old boy previously healthy	10-day progressive cough, low-grade fever, dyspnea on exertion	diffuse rales bilaterally	Chest x-ray (perihilar infiltrate)	A) Pneumonia due to respiratory syncytial virus B) Pneumonia due to *streptococcus pneumoniae* (Pneumococcus) C) Pneumonia due to *mycoplasma pneumoniae* D) Pneumonia due to staphlococcus E) Congestive heart failure F) Tuberculosis	C	1. Any four others. 2. Include all pneumonias 3. Include only two other pneumonias
1. Same as 0 above.	10-day progressive cough, 24 spiking fever and dydpnea on exertion	diffuse rales bilaterally; egophony on right	Chest x-ray (two small air fluid levels on right)	Same as 0 above	D	Follow rule 2
2. Same as 0 above	Same as 1	fine crackling rales in right posterior base with impaired resonance	Chest x-ray (infiltrate in right lower lobe, fluid in right fissure); WBC = 38,000; 96% PMN	Same as 0	B	Follow rule 3
3. 2-mo-old boy; normal delivery	10-day persistent cough, afebrile, alert, rapid breathing	red eyes with purulent discharge from both; diffuse rales bilaterally	Chest x-ray (hyperinfiltration, diffuse interstitial infiltrates	G) Group B beta-hemolytic Streptococcus H) Hemophilus influenzae I) Pseudomonas J) Chlamydia pneumonia K) Pertussis	J	4. Include cited options
4. Same as 3 above	10-day mild cough with choking episodes, low-grade fever, profuse mucoid nasal discharge	conjunctival injection; normal chest sounds	Chest x-ray (perihilar infiltrate, scattered atelectasis); WBC = 30,000; 70% lymphocytes	Same as 3 above	K	Follow rule 4

(Adapted from LaDuca, Templeton, Holzman, &Staples [1986] Item modeling procedure forconstructing content-equivalent choice questions. Medical Education, 20, 53-56.)

1.8 Access to the Question bank (Q-bank)

The Question bank will be kept in a secure location at the HPCALD (MOH) and only the directorate shall decide on who shall have access to the Q-bank and when. Subject Matter Experts and other technical experts shall have restricted access as deemed necessary by the directoratefor the purpose of accomplishing their own respective tasks only. For instance, they may use some features of the Item development software in order to write, review, edit test questions.

The HPCALD shall exercise Maximum Security in collaboration with concerned authorities (NEAEA, Insurance Companies, INSA). NEAEA shall help with the exam security before and during exam administration.

- *The Directorate shall prepare an Ethical charter (Security agreement form) and members and other individuals involved should sign and commit to the cause and shall be held accountable for any breach.*

Section II. Exam Administration and Management

In an effort to standardize Health Professionals' Competency Assessment and Licensure Exam Administration procedures, the Health Professionals' Competency Assessment and Licensure Directorate developed the exam administration section. These procedures apply to all exam centers and staffs involved in handling and/ or administrating the tests including, students, exam coordinators, invigilators, assessors, and support staffs. The procedures must be followed by all involved to ensure the security and validity of all tests administered by HPCALD. Consistent, standardized administration of the exam allows making direct comparisons between examinees' scores, despite the fact that the examinees may have taken their tests on different dates, at different sites, and with different invigilators. Furthermore, administration procedures that protect the security of the test help to maintain the meaning and integrity of the score scale for all examinees.

This section of the implementation guideline has been divided into two main parts. The first part deals with the administration of written exam (multiple choice exam administration). The second part sets the basis for administration of the objective structured clinical examinations (OSCE).

Note: All policies and procedures outlined in this Guideline must be followed during each and every Exam administration. Failure to follow the procedures in this guideline may result in suspension or revocation to administer the Exam in the future. The HPCALD reserves the right to revise the policies and procedures outlined in the implementation and administration Guideline.

2.1. About the Examination

Exam Schedule

There will be three to four fixed exam schedules each year for all health profession cadres. However, the exact time of examination shall officially be announced by HPCALD to all health professionals' pre-service training institutions. All candidates are advised to take exams at recommended time-lines and schedules for their own advantage. But they must take the exams before being licensed to work in the health sector. While the interval between the administration of MCQ and OSCE is determined by logistic arrangements (preferably both exams to be scheduled within the same week). Owing to challenges related to logistic arrangements, the exams could be administered at intervals in which case the OSCE shall be administered at a later date.

Table 5: Exam Schedule (Tentative)

Exam Rounds	Timeline
First Round	June –July
Second round	October -November
Third Round	February- March

Overview of the Exam

All licensure exams will be conducted in "English Language" for English is the media of instruction in the Ethiopian Higher Education System. All knowledge examinations for licensure are one best-answer multiple-choice questions. The examinees will be asked questions that test three types of cognitive skills: recall and comprehension, application, and analysis as depicted in the table below. More emphasis shall be given to questions exploring applicable knowledge.

Table 6: Description of Cognitive skills

Cognitive Skills	Purpose	Performance/ Ability Required	%
Comprehension and Recall	To measure memory	Ability to recall or recognize previously learned (memorized) knowledge ranging from specific facts to complete theories	5-10
Application	To measure basic interpretation of data	To measure basic Ability to utilize recalled knowledge to interpret or apply	40-50
Analysis	To measure the application of Knowledge	Ability to utilize recalled knowledge and the interpretation/application of distinctcriteria to resolve a problem or situationand/or make an appropriate decisionapplication of knowledge	35-45

Exam Format: Each cadre-specific examination consists of one hundred fifty to threehundred fifty (150-350) multiple-choice questions, with four (4) choices per question. About 10% of the questions are un-scored pilot questions. The pilot questions are randomly distributed throughout the examination and are not identified.

Duration: Candidates must complete the Exam within the allotted time frame. It should benoted that about 30 minutes is typically required for pre-exam administrative activities once all Candidates have arrived. The time allocated for each cadre depends on the total number of questions per exam, assuming an average examinee would take one minute and a quarter (1.25 minutes) to answer one question. Exams shall be administered in blocks of not more than 120 Questions lasting for 2:30 at a time which must be followed by at least a 30-minute break before taking on the second block of examinations.

*Passing Score:*The passing score is determined using a Modified Angoff method to ensure fairness across different examination forms.

Exam Reports: A Pass or Fail Score Report will be directly mailed to each respective institution after answer sheet has been scored and items analyzed. Result should be notified within 6-10 weeks of administration of the exam.

Retaking: A candidate may retake the Exam and a maximum of five attempts are allowed for a candidate. There should be a reasonable time-lapse between subsequent exams to ensure that the candidate is adequately prepared to fill his/her gaps before taking it again.

2.2. Candidate Eligibility

Eligibility Requirements

Candidates who have passed all courses and exams delivered by the institution or /and completed all academic requirements including internship; however the directorate in consultation with the students/institutions may allow some flexibility to fit to the exam schedules are eligible to appear in the Licensing examination. Students who meet the eligibility requirements shall confirm with the HPCALD that they intend to sit for the exam by filling out a candidate eligibility Form.

Student's right to take an examination is contingent on:

- Being registered in an accredited Public or Private Health Science Colleges or Universities
- Being capable (i.e. not ill or impaired) to take an exam, and must pass all internal examinations according to the institutions 'rules and regulations
- Being able to produce valid student identification before and during the examination
- Submission of the signed candidate eligibility form

Special Accommodations Policy and Process

Candidates who May apply for special accommodation includes those with:

- Documented /Diagnosed disabilities that would prevent them from taking the examination.
- Transitory conditions which are generally not disabilities like pregnancy, breast feeding mothers, fractures, sprain.
- Chronic medical illness (DM, Epilepsy, heart disease, COPD….) May apply for special accommodation.
- The institution should notify for candidate's preparation of special accommodation within two weeks after start of registration.

The special accommodation includes:

- To create conducive environment for candidates with disabilities.
- Providing available waiting area for baby caregivers.
- Protect the pregnant candidates from unfavorable treatment.
- Special attention for candidates with chronic illness including identifying nearby an emergency care provision center.

Eligibility Requirements for Internationally-educated candidates

International applicants must hold first degree in any health science and medical programs and able to provide their authenticated documents from Higher Education Relevance and Quality Agency (HERQA)/other concerned bodies.

Once an applicant's certificate has been approved, admission to the licensure examination is granted.

Conferring and Confirming Eligibility

Every student that seeks to take the exam must complete a Candidate Eligibility Form and have it signed by the responsible body of the institution. The signed form should be given to the Exam Administrator or Exam Invigilators for use in confirming eligibility on the day of the Exam. It is the responsibility of the exam invigilators to confirm Candidate eligibility on the day of the Exam administration. The Candidate Eligibility Form contains all of the information that must be submitted by the Exam Administrator to HPCALD. The Candidate Eligibility Forms should be retained by the Exam Administrator for this purpose.

2.3. Exam Administration Team Roles and Responsibilities

Exam administration has different team members who function based upon their roles and responsibilities vested to them. Members involving in the exam administration are central exam overseer, supervisors, invigilators, coordinators and other support staff. The exam administration can be viewed from the very preparation to actual administration and post-exam activities.

Central Exam Coordinators

The major list of duties and responsibilities of central exam coordinators is outlined in here,

- Organizes and coordinates submissions for final examinations. Ensures all examinations are received and that policies governing information and formatting are respected. Verifies and compiles information.

- Prepares examination schedules and timetables. Distributes schedules to faculties and departments. Resolves schedule conflicts. Posts examination timetables.

- Reviews and participates in the establishment of production schedules. Coordinates the printing, storage and delivery of examination papers.

- Verifies results to ensure instructions have been followed. Ensures all information is accurate. Ensures security measures are in place and maintained.

- Acts as resource person. Liaises between exam centers and HPCALD. Resolves problems as well as makes recommendations to improve examination process.

❖ *The exam coordinators shall be assigned from HPCALD team, if additional human resources are needed, they can be recruited from various directorates of FMOH.*

Responsibilities of the Exam Center coordinator

- Communicate with central coordinators and supervisor
- Recruit local support staff and assign roles
- Arrange exam venue with standard requirement
- Post exam schedules at convenient place
- Facilitate exam administration process at the center
- Setting up individual stations
- Setting up the bell system for OSCE

Exam Invigilators/ Assessors

- Arrive to the exam center on time
- Take orientation

- Confirms candidate eligibility on the day of the Exam by ensuring that a Candidate Eligibility Form has been signed.
- Confirms Candidate identification by cross referencing the information on a government issued photo-ID with the information on the Candidate Eligibility Form.
- Examine candidates
- Report any irregularities to supervisor
- Record and report the overall OSCE result to the supervisor
- Take corrective actions during examination
- Manage time properly
- Collect and return answer sheets and exam booklets to supervisor

❖ *One exam invigilator is required for 25-30 Candidates (examinee/ invigilators ratio= 25:1). It is recommended that at least two Exam Invigilators be present in an examination room for Exam administration.*

Responsibilitiesof IT expert
- Perform institutional readiness assessment for CBT
- Check the functionality and compatibility of computers
- Assist orientation for examinees on CBT
- Provide IT support for computer based testing
- Arrange the computer lab in a row-by-row at 3ft (91.4cm) between examinees
- Fix in case of glitches
- Contribute in appeals management pertaining to CBT
- Make sure the back-up generator is ready and supply power to the data center

Exam Printer/Courier/Shipper

Any individual who will come in to contact with the Exam for the purpose of printing, delivering, shipping, or some other associated task must register with HPCALD by completing an Exam Administration Agreement Form and submitting it to HPCALD at least 7 days prior to the Exam administration. This registration will then be valid for all future Exam administrations.

2.4. Exam Administration Procedures – Pre-Exam

Printing the Examination Booklet

The HPCALDteam member shall oversee the print/photocopy process of the Exam Booklet. The designated person should print or photocopy sufficient copies of the *Exam Booklet* to administer the Exam to the expected number of Candidates that will be sitting for the scheduled Exam administration. At least 10% additional *Exam Booklets* should be printed in case a defective booklet is discovered on the day of the administration. Print audit shall be made to make certain that all pages' print and that all of the Exam questions and answers are included and printed legibly.

> *Note: the printing audit should include checking for print quality and completeness only. No one, including Invigilators, Instructors, or the Exam Administrator, may read or study the questions on the Exam.*

If any pages are found to be defective during printing, they should immediately be destroyed using a suitable paper shredder. Only after proper shredding, using a mechanical device designed for such purpose, shall the shredded paper be placed in a recycling container.

All Exam Booklets must be securely stapled with a single staple in the top left corner. Exam Booklets should never be stored, transported, or administered to Candidates bound by a Paper clip or loose leaf.

The Exam questions and answers are developed and verified for accuracy by the HPCALD under the direction of psychometric experts. Questions and comments about the contents of the Exam will only be accepted from Candidates via the Candidate Comment Form, included in the Exam Booklet. All comments will be reviewed by HPCALD and forwarded to the Exam Committee.

Exam Security

All personnel involved in the exam administration shall be reminded of the importance of safeguarding the confidential nature of the Examination materials before, during, and after the Exam administration. In addition to locking the examinations in a safe place when not in use, due attention shall be given to observe the following safety measures:

- Unless there is a question of a defective Exam Booklet, testing personnel are not permitted to view the contents of the Exam Booklet at any time before, during, or after the Exam administration. Only Candidates who are registered for the Exam may view the contents of the Exam Booklet at the time of Exam administration.

- No one is allowed to duplicate or retain any portion of the Exam Booklet, except for the purposes of administering an Exam as outlined in this guideline.

- Never leave Exam Booklets in the open. Keep all Exam Booklets in secure storage before and after the Exam administration.

- After the exam administration all copies of the Exam Booklet, Answer Sheets, Candidate Comment Form, and other related examination materials must be shipped to HPCALD central office, including any unused exam booklets.

Storing the Exams

Once printed, the Exam Booklets must be maintained under double lock to be secure. They should never be left out in the open. A locked file cabinet or desk in a locked room or closet is acceptable. Keys to secured desks and rooms must be available only to individuals who have signed an Exam Administration Agreement Form. The room itself must not be readily accessible to the public, potential Candidates, or other unauthorized persons.

Note: It is the responsibility of any and all persons involved in the administration of the Exam to notify HPCALD of any confirmed or suspected Exam security breach. If it is determined that breach has occurred, appropriate actions will be undertaken to investigate and remedy the situation.

Breach of Security

For any suspects of exam security breaches, report shall be made using the Incident Report Form. All facts related to the security breach should be briefly reported on the form. The HPCALD will contact all involved for detailed information.

Note: "Breach of security" includes a lost Answer Sheet, misplaced Exam Booklet, or any Situation where the contents of the Exam may have been compromised.

Examination Forms

All of the forms necessary to administer the Exam and submit Answer Sheets to HPCALD for scoring are provided in the Appendices of this implementation Guideline. All forms will be available in the " HPCALD" section of the FMOH website.

1. ***Candidate Eligibility Form*** – This form includes the information that will need to be submitted to HPCALD about each examinee that wishes to sit for the HPCALD Entry Level Exam.

2. ***Answers Sheet*** – Only original Answer Sheets shall be used. The copy included in the Appendix is for illustration only; do not photocopy answer sheets. Answer Sheets are scored using an automated scoring machine and only official, original HPCALD Answer Sheets will be accepted.It is the Exam Administrator's responsibility to maintain sufficient inventory of Answer Sheets and to request additional sheets as required prior to any scheduled Exam administration.

3. ***Exam Roster*** – The Exam Roster must be used to indicate who sat for the Exam. Answer Sheets submitted without a corresponding signature on the Exam Roster will not be scored. Examines must sign in on the Exam Roster when they first enter the room. Before the Exam is administered, the Exam invigilator/assessor utilizes the Exam Roster to acknowledge that they have confirmed the Candidate's eligibility and identification. After the Examinee completes the Exam, the Exam invigilator/assessor utilizes the Exam Roster to acknowledge that they have received all of the Exam materials back from the Candidate before the Candidate is allowed to leave the room.

4. ***Candidate Comment Form*** – This form, included in the Exam Booklet, allows Candidates to communicate questions or concerns about an Exam administration or the contents of the Exam to HPCALD.

5. ***Incident Report Form*** – This form provides the Exam Invigilators with a way to let HPCALD know of any unusual occurrences that could have an effect on the Candidate(s) score(s).

6. ***Invigilator Agreement*** – The Invigilator Agreement must be signed by the Invigilators that administered the Exam and returned with Exam materials.

7. ***Packing List*** – The Packing List must be filled out and included when returning Exam materials to HPCALD.

2.5. Exam Administration Procedures

Selection of Exam Centers

For the time being Pre-service Training Institutions (Universities & Health science colleges) shall serve as exam centers. The HPCALD shall establish and run its own independent Exam Centers in the long term at different regions/cities after careful mapping of existing Training Institutions. The HPCALD may also accredit examination centers according to predetermined standards.

It is the exam administrator's responsibility to make certain that the testing facility meets the above standards.

An Exam site must meet the following requirements:

- Adequate seating for expected number of Candidates with minimum 1.25 m. distance between Candidates
- Lighting at each Candidate's work space must be adequate for reading the fine print.
- Ventilation and temperature control must be adequate for the health and comfort of the examinees
- Candidates Space for storage of Candidate personal items during the exam ~ Table and chair for the Exam Invigilators(s) at the head of the room
- Blackboard and chalk or Whiteboard and markers
- Desk/table surfaces are clean, smooth, and large enough for *Exam Booklet Answer Sheet*

- Appropriate authorities have been contacted to ensure that potential conflicting activities will not interfere with or intrude upon the Exam administration (e.g. other meetings, building construction, etc.)
- Rest rooms are nearby and unlocked
- The seat arrangement should be singly and in rows
- Location of the hall should be easily accessible for candidate with disabilities

  ✓ Assigning a guide for those in need
  ✓ The gate of exam hall should have a disable ramp

- The location of exam hall should be located in a quite area (far from commercial or industrial sites, and hazardous locations) that might affect the examination process.
- It should be easily accessible with entrances not close to highways and main roads.

Computer based exam administration

A. General requirements
- The minimum capacity of hall for computer based exam should accommodate 25 computers and the distance between two computers in each direction should be 1meter apart.
- Examination hall for computer based exam should be prepared separately. If not computer lab or digital library could be arranged based on mutual agreement.
- There should be at least one IT professional during installation of the exam and related software per 25 computers
- The installation and configuration of computer equipment should be made IT professionals early enough prior to test commencement to allow possible troubleshooting.
- Backup generator must be available and ready for the whole exam day and duration
- Have 10% Reserve computer

B. Requirement of work station for administrators
- Computer with accessories and printer

C. Requirement for exam candidate workstation

- Computer with accessories
- Orientation on how to use the computers

D. Technical requirement of the network

- Minimum internet bandwidth: 512Kbite/sec
- Minimum LAN wireless bandwidth: 52Mbite/sec
- Minimum LAN wired bandwidth 10Mbite/sec
- switched network

Skill assessment hall and OSCE Station preparation

Preparation of OSCE station depends on the competency of the licensing exam candidate or based on task analysis result and basically it will have the following basic criteria:

- ✓ The size of the hall should depend on the number of stations.
- ✓ The number of OSCE station depends on the type of competency/ task analysis to be assessed specific to the health professions, with a minimum of 14 stations.
- ✓ The minimum distance between each station should be 1.25 meter
- ✓ The hall should have adequate number of tables and chairs suitable for the arrangement of the station.
- ✓ Each station should have adequate illumination and ventilation
- ✓ Storage space for accommodation of reserve equipment's.
- ✓ Utility room with adequate water supply and antiseptic solutions for infection prevention
- ✓ Each station should have necessary equipment's (consumable and non-consumable) based on the specific professional competence as described in the annex part.
- ✓ The room should be separated from skill lab, training room and the written assessment hall during the assessment. If not the skill lab and training room should be prepared based on the skill assessment hall criteria.
- ✓ There should be waiting room for quarantine of candidates waiting for the assessment

Preparing for Candidate Arrival at Test Site

The Exam Invigilator(s) should arrive at least 1 hour prior to the scheduled Exam in order to set up the room and be prepared to greet the candidates when they arrive. Before admitting the candidates, the following preparations shall be completed:

1. The registration table has been set up and the Exam roster is in place
2. A table is set up for candidates to place personal belongings during the Exam
3. Examinee eligibility Forms are on hand and are arranged alphabetically for easy reference
4. All Examination materials must be kept out of reach of the examinees until distributed by the Exam Invigilators.
5. The following information is written on the black/white board:
   - ✓ Invigilators(s) Name(s)
   - ✓ Date
   - ✓ Allotted time
   - ✓ Starting time Ending time
   - ✓ Reminding 15 minutes before the ending time

Assessing the Seating Arrangement

Exam Invigilators are responsible for supervising the seating of each examinee to ensure that they are properly spaced. If possible, seats should be pre-assigned. Examinees should be seated in sequence, row-by-row, beginning in the front of the room. Invigilators must ensure that Candidates are seated according to the standard

Meeting Candidates

Exam Invigilators should greet Candidates as they enter, check Candidate eligibility, confirm identification, and have them sign in on the Exam Roster. Once a Candidate has checked in they should be directed to sit in the appropriate location. No Examination materials should be distributed to the Candidates at this time.

Besides the Candidates, Exam Administrators or Exam Invigilators who have completed and filled an Exam Administration Agreement Form with HPCALD are permitted in the examination area. No visitors are permitted in the examination area.

__Note:__ Under no circumstances shall an individual be allowed to take the Exam if it cannot be verified that they have completed the Candidate Eligibility Form or their identity cannot be confirmed

The same instructions apply to all Candidates; however, some examinees may need additional assistance or special accommodations. In such occasions the examinee will need to provide documentation of the need for any special accommodations from HPCALD. HPCALD will determine what, if any, accommodations can be granted by the institutions. Examinee must make requests for accommodations as far in advanced as possible as the process for review and approval can take several weeks or more. *(Annex III)* If accommodations are granted, specific instructions will be provided to the examinee and the Exam Administrator prior to the scheduled Exam.

The Exam Invigilators must NOT deviate from the standard examination procedures for any Candidate without prior approval from HPCALD.

<u>Distributing exam materials and about using the answer sheet:</u>

- Once examinees are seated, examination packet should be opened in front of the examinees by assuring the sealing of the packet patent.
- The examiner must count the number of exam booklets and answer sheets before administering the exam. If there is any loss, he should report timely and take appropriate measure before starting the exam.
- Exam booklet and answer sheets should be given directly to each examinee.
- Examinees are not allowed to mark on the exam booklet and answer sheet until invigilators give the permission to start.
- Five minute will be given to examinees to complete the required information (like name, sex, code number, identification number, department, institution name).
- Once the examinations are started, the examination doors must be closed.
- The candidates should be told to check for completeness of exam booklets before starting the exam. If an incomplete or misprinted exam booklet is found, it should be replaced with the right one.
- Candidates shall be allowed to enter to examination room until 30 minutes of the starting time, and candidates are not permitted to leave the exam room before one hour from the starting time.

- Absent candidates (candidates who are late more than 30 minutes and those who didn't come to the exam center) during exam should be reported to HPCALD.
- Absent candidates with sound reason, will be re-schedule for the next round without any registration fee and the attempt will not be counted.
- Absent candidates without sound reason are obligated to pay registration fee for the next round.
- A candidate has the right to take the exam five times including the first attempt.

> *Note: **The room should never be left unattended while the exam is in progress.***

General Instructions for Candidates

The following Examinee conduct during the administration of the exam is strictly prohibited, violates the standards of Exam administration, and is grounds for dismissal from the examination:

- Communicating with any other examinee during the administration of an Exam ~ Copying answers from another examinee
- Being loud, disruptive, or causing any kind of altercation ~ Using notes or reference materials
- Removing any examination materials from the examination room or area
- Attempting to obtain information through an electronic transmitting device, such as cameras, cell phones,

The following rules shall be followed during the entire exam administration process:

- If a Candidate has an emergency or needs to use the restroom, s/he should raise his or her hand
- Only one Candidate at a time is permitted to leave the room.
- There is to be no smoking, eating or drinking (except water& Candy) in the room by Candidates
- Exam Invigilators should circulate quietly throughout the room during the examination period

- Exam Invigilators shall not answer any questions about Exam items. Examinees should do the best they can on each item. If a Candidate feels there is an error within an item, they should note this on the Candidate Comment Form included in the Exam Booklet. *(Annex IV)*

- Exam Invigilators are NOT authorized to answer questions concerning the content of the Exam; however, any procedural questions that arise may be answered to the best of their ability

- Due to the noise associated with gathering materials at the end of the Exam, examines who have not completed the Exam when the 15-minute time limit is announced may not be permitted to leave the test center until time is called. Examines will be asked to remain in their seats until time is called in order to minimize the disruption to Examinees still testing

- The Invigilators should take their Exam materials before allowing the Candidate to leave the room

- Any examinee being loud and disruptive, or ignoring instructions from the Exam Invigilators should be asked to return all Exam materials and leave the Exam room, an Incident Report Form filled out (See Annex V), and the incident shall be reported to HPCALD.

- If a Candidate(s) suspected of cheating or talking, see section on "Dealing with Suspected Dishonesty (Cheating)" for direction

Dealing with Suspected Dishonesty (Cheating)

If an Exam Invigilators notices or suspects an Examinee are looking at another's paper or talking to another examinee:

- A general announcement should be made that candidates should keep their eyes focused on their own papers and that no talking is allowed during the Exam.

- If the action continues, the Examinee should be asked to move to another seat and told that the incident will be reported.

- If this continues, the incident must be documented using the Incident Report Form.

If an Examinee is observed reading from notes:

- The Exam Invigilators should collect the notes and ask the Examinee to step to the back of the room.
- The Invigilators should pick up all of the Examinee Exam materials and the Examinee should be informed that they are not allowed to complete the Exam and that this incident will be reported to HPCALD.
- If the Examinee insists on finishing the Exam, they should be allowed to finish, but should be told that the Exam will not be scored.
- The incident must be reported on the Incident Report Form and the notes should be attached to the form.

__Note__: HPCALD may subject examinees suspected of cheating to penalties including (but not limited to) the following: canceling their examination score (with no refund or credit for any future examination), denying scoring of their examination, revoking their certification or legal proceedings to recover costs associated with lost examination questions.

Handling an unexpected emergency

In case of a fire or weather-related evacuation, the Exam Invigilators should never endanger themselves or any Examinee. The Examinee should be told to hand in their Exam materials quickly and orderly exit the room and building. The Exam Invigilators should follow the Examinee out of the building while either maintaining possession of the Exam materials or leaving them in the room and locking the door(s).

If an Examinee becomes ill or injured a second Exam Invigilators (or another Examinee) should be asked to call for assistance. An Exam Invigilators should remain with the ill or injured Examinee until help arrives. If an Examinee cannot continue the Exam, note on the front of the Exam booklet the time that the Examinee was ill or injured. If an examinee decides not to finish the examination, examination materials should be collected. The incident shall be documented on the Incident Report Form and examinee's answer sheet should be attached to the form. The Examinee will need to retake the Exam.

Encourage examinees to use the restrooms prior to the beginning of the examination. Examinees shall not take their personal belongings (stored in front or back of the room) with them into the restroom. No other materials should be taken into the restroom.

If any other emergency or disruption happens, the Exam Invigilators should contact HPCALD if the examines can continue or if the Exams need to be collected and the Exam rescheduled and the incident should be reported on the Incident Report Form.

Collecting Exam Material

Once an examinee completes the examination, he/she is free to leave. Examinees leaving early shall not be allowed to disrupt the examinees still taking the examination. In such occasions it is best to go to the examinee and collect the pencil, examination booklet, and answer sheet.

Before each examinee leaves exam site the Exam Invigilators must: Ensure the examinee has returned all Exam materials by checking the appropriate boxes on the Exam Roster.

1. Exam Booklet
2. Answer Sheet
3. Candidate Comment from (used or unused in Exam Booklet)
4. Verify that all information is properly coded on the Answer Sheet.

Exam Booklets are personal documents and may NOT be filled in by the Exam Invigilators. Answer Sheets and Exam Booklets are to be filled in only by the examinee to whom they belong. If any information is incorrect or missing the examinee should be asked to fill in or correct it before he/she leaves. The examinee may NOT change existing answers or mark additional answers once time has been called.

2.6. Exam Administration Procedures – Post-Exam

Returning Exam Materials

All completed forms and all used or unused Exam materials shall be placed in the package in a neat and orderly fashion. Exam Materials should be submitted stacked in the order listed on the Packing List with each set of materials organized in the same order as the names listed on the Exam Roster.

- Packing List
- Exam invigilator agreement form(s)
- Exam assessors' agreement form

- Exam rosters

- Completed Answer Sheet

- Exam booklets

- Station profile booklets

- Incident report Form

All Exam materials are to be shipped, within two (2) business days after the completion of the Exam to the central HPCALD office.

➢ Exam booklet should be mashed /burned properly in front of the exam committee within two days after it returned back to the center.

➢ Whereas answer sheet should stay up to 6 months of result publication.

One copy of all items of the exam should be kept in both soft and hard copies in licensing exam directorate office to compute further analysis.

Note: Do not fold, bend, crease, staple, tape, paper-clip, bind with rubber band, or otherwise damage the Answer Sheets. Make sure materials are packaged in sufficiently sturdy packaging to prevent damage in transit. Answer Sheets are processed through an automatic scoring machine and must be delivered flat and unbound for proper handling.

2. 7. Result Notification and Feedback

Scoring

The licensure Examination is scored in a **two-stage process**. This process is performed for each examinee:

Stage One: the overall score for the entire examination is computed and compared against a pre-determined minimum acceptable performance level, or passing score.

This level is set by a group of content experts and educators who, for each question on the exam, determine whether an examinee just above the competency threshold would be expected to select

the correct response. This standard psychometric process, known as Modified Angoff standard setting, has been used for many years for all of its "written" and computer-based examinations. Exam scores are calculated on a scale which ranges from 150 (lowest possible score) to 800 (highest achievable score).

> ❖ *If your overall score is below the passing score, your overall result is "Fail."*
> ❖ *If your overall score is at or above the passing score, stage two of scoring is applied*.

Stage Two:examinee performance in each of the two categories (MCQ & OSCE) is independently calculated and compared against a conditioning threshold specific for each category, set by the national Exam oversight committee.

> ❖ *If an examinee passes the two categories, the overall result is "Pass."*
> ❖ *If an examinee fails in one of the two categories, the overall result is "Fail."*

Exam Analysis

- Both psychometric Analysis and expert judgment will be performed for MCQ and OSCE exams to determine item or station properties. It includes but not limited to item difficulty index, item discriminability index, inter-rater reliability tests, and expertise judgment value.
- The exam analysis process shall involve psychometrician, experts, exam development team.
- The exam analysis should be conducted in collaboration with the exam development team and results should be documented for future use.

Post-Exam Analysis for Written Exam

- Statistics should be calculated for individual exam items (item analysis) and for the whole examination.
- The examinations and individual items are reviewed in a post-test analysis. The purpose of the post-exam analysis is to review exam items that do not, on the item analysis, perform statistically as expected. Items are evaluated individually based on three criteria: the percentage of examinees who chose the correct response, how well the item

discriminated between examinees who had high scores and those who had low scores, and the spread of responses (i.e., the percentage of examinees who chose each response).

- Items that few examinees answered correctly, items that were poor "discriminators", and items for which equal numbers of examinees chose three or four responses are flagged for review. A list of the flagged items is sent to the Exam development team for review.

The following exam analysis should be considered:

- A Cronbach's alpha $\geq$ 0.7 should be taken as an acceptable level of reliability for Health Professionals' Competency Assessment and LicensureExam.
- Item difficulty or item mean: the item difficulty index ranges from 0 to 100; the higher the value, the easier the question. The NHPCAL MCQ exam is four responses multiple choice, thus 70 is the ideally difficulty.
- Item discrimination: determines the extent to which the given item discriminates among examinees in the function or ability measured by the item. Value of the discrimination index can range from -1.00 to +1.00. Items having negative discrimination are rejected. Items having discrimination index above .20 are ordinarily regarded satisfactory for NHPCAL.

Post Exam Analysis for OSCE

Psychometric Analysis

The administration and exam development case should collaborate for post-exam analysis. The following analysis should be performed for each OSCE by the data management team and should be available at the exam board (For Additional analysis psychometrician should be consulted):

A. Cronbach's alpha of 0.7 to 0.8 should be taken as an acceptable level of reliability for Health Professionals' Competency Assessment and LicensureExam. The examination board should apply Cronbach's alpha that allows the detection of the OSCE stations which are main sources of error, by removing one station at a time from the analysis and looking at the reliability of the remainder. An analysis of the difference removing each station would make to the Cronbach's alpha should be undertaken. If there is a

substantial difference (>.05 increase in alpha), this may be an indication of a problem with the OSCE station. In such circumstances, quality improvement should be undertaken by revisiting the performance of the station and reviewing checklist and station design.

B. G-theory use is recommended to investigate the sources of error and the number of observations required for a given level of reliability. Multi-facet ANOVA analysis should be conducted to obtain the estimates of the components of variance for each of the following facets: stations, sites, test versions, and all their interactions. G coefficient of 0.7 to 0.9 should be taken as an acceptable level of reliability for Health Professionals' Competency Assessment and LicensureExam.

C. Coefficient of R2 analysis should be performed to measure of the correlation between the checklist score and. the global rating for individual stations. Good correlation (R2>0.5) will indicate a reasonable relationship between checklist scores and global grades. When low R2 reported, quality improvement should be undertaken by re-writing of the station and checklist with plans for re-use of this station and subsequent analysis of performance within a future OSCE.

D. Between-group variation: this metric should normally be <30%, and anything higher should prompt investigation of possible systematic biases by time, examination site or examiner factors. A line representing 2 standard deviations will be added to the examiner feedback graphs by the data management team to indicate outliers.

E. Number of fails: An unusually small or large number of student fails for a single station should prompt investigation

F. Difficulty index (Item Analysis): refers to the "easiness" of the station, Stations with difficulty levels of about 0.50 have been found to be most useful.

G. Discriminability index (Item Analysis): The purpose of this index is to help determine how well each station separates more knowledgeable students from less knowledgeable students. Additional Psychometric analysis could be done as deemed as necessary.

Score reporting

A Pass or Fail Score Report will be directly mailed to each respective institution, exam centers and others stakeholders after answer sheet has been submitted and scored. Result should be notified within 1-2 monthsafter administration of the exam. However, delays are possible for various reasons.

Feedback Mechanism

➢ The Health Professionals' Competency Assessment and LicensureExamination procedures should employ various methods of feedback solicitation to inform and improve the licensing examination process by collecting opinions from students, assessors, institutions and other stakeholders.

➢ In addition, the Health Professionals' Competency Assessment and LicensureExamination shall provide feedback based on the analysis of results of examinees to exam center, training institutions and other stakeholders.

Licensing

A person cannot act as a qualified health professional until the required test(s)are passed and the licensing procedure is completed. HPCALD shall issue a certificate for those examinees that pass the exam.

Re-examination

Examinees failing must retest and pass to license. HPCALD will only allow Examinees to retake the examination a maximum of fivetimes in 24-month period. For the failures: The directorate shall provide a score report with meaningful feedback such as performance by domain/specialty. The training institutions shall provide academic support (access to skills lab, library and other resources) to help the student improve his/her performance. The student should be more proactive to exploit these opportunities to succeed.And Agreement should be signed with the student to ensure readiness for the exam, (self-assessment form. A third attempt is at a candidate's own risk for both apprenticeship and other payments or extraneous costs.

Appeal systems

The HPCALD routinely reviews the policies that govern the development and administration of the Health Professionals' Competency Assessment and LicensureExamination.

- For complaints related to exam administration and invigilation, the examinee hasthe right to present his/hercomplaints to the exam supervisors verbally or in writing on the same date of exam administration. If the examinee is not satisfied with the decisions, he/she can submit his/her written appeal to the directorate within 10 working days.

- The Directorateshould make every effort to notify its final decision to theexaminee within 10 days after receipt of the appeal through appropriate means of communication.

- If the candidate has a tangible evidence of an unfair treatment of any sort by exam supervisors, invigilators or assessors, he/she may appeal to a Disciplinary Committee (DC) at the HPCALD. The DC can appoint a team/committee to investigate the issue as necessary and come up with a decision. If the committee however concludes beyond doubt that it was a false, claim on the part of the candidate (especially if repeated) actions might be taken against that particular candidate even up to "banning the candidate for life" from taking the exam.

- For any complaints related to exam result, examinee must submit their appeal to HPCALDin awritten form (should provide proof of payment) within 10 working daysafter release of the exam result.

- The Directorate should make every effort to notify its final decision to the examinee within 15 working days after receipt of the appeal through appropriate means of communication.

When reviewing appeals, the HPCALD will consider what effect granting the appeal would have on other candidates, the role of the examination in providing a measure of minimal entry –level competence, the security of the exam, and any impact the decision might create for the jurisdiction in which the candidate is applying or any other jurisdiction.

Exam security spot check

The standards of exam security will be monitored and upgraded at all steps of the licensing examination processes; during item development, review, assembly, storage, administration and

analysis. Assessing exam security, identifying problems and rectifying them are critical steps in ensuring the quality of exam security. To that end, regular spot check visits and review processes will be conducted at all steps. Checklists will be developed for regular assessment.

2.8. OSCE Examination Administration

The preparation of an OSCE is different from preparing knowledge based exams with multiple-choice questions. The success of an OSCE largely depends upon thorough planning and efficient organization. Without comprehensive planning and organization, the OSCE will be flawed and its implementation likely of being unsuccessful. The various components involved in OSCE planning and management are described below by taking in to account the local context of exam centers. This section will explicitly focus on the major components that are common to all exam centers

Human Resource Need

Though the organizational structure of running an OSCE will depend on local circumstances, the majority of the components that are common to all exam centers includes establishment of various committees/teams and mobilizing individuals as we assign Roles and Responsibilities as described below.

OSCE Coordinator

The coordinator should be identified as early as possible in the planning of an OSCE. It is essential that this person should have previous experience in managing an OSCE. The coordinator is responsible for overseeing the development, organization, administration, and grading of the examination. In addition to the OSCE coordinator that will be stationed at HPCALD (centrally) there should be local coordinators available for each OSCE exam centers.

Developing a Pool of Trained Examiners

Examiners play a pivotal role in maintaining the reliability of the scores in an OSCE examination. Developing a pool of trained examiners requires the establishment of an ongoing process whereby new examiners are added to the pool and the existing examiners are retained by providing refresher trainings. In so doing the identification of potential examiners who have relevant clinical experience to the OSCE stations and delivering examiners training workshops are among the core tasks to be conducted regularly. Though the level of OSCE examiner training will depend upon the background and ability of the examiners, the training sessions shall cover

the following learning outcomes indicated in the below box. The training session can be organized in any format but generally include group discussions about some of the above topics, followed by the opportunity for the examiners to mark Mock OSCE.

Learning outcomes for OSCE examiner training sessions

- To understand the scope and principles of the OSCE examination
- To maintain consistent professional conduct within the examination
- To understand and use the scoring rubric in order to maintain standardization
- To provide written feedback on performance if required in summative examinations
- To provide verbal feedback at the end of station in the formative examinations
- To ensure confidentiality of the candidates' marking sheets
- To understand the procedures for inappropriate or dangerous behavior by

Station Developers

Once the test blueprint is approved, the task of developing stations can begin by assigning specific stations according to the test blueprint. The appointed station developers must have good clinical experience, should be familiar with the curriculum or training program. All the stations developed must be presented to the OSCE committee for scientific review and to determine the compliance of the station construction with the blueprint and measurement validity. If the OSCE is going to be held for first time a workshop may be very useful to help the examiners develop sound and valid stations in the prescribed format.

Support Staff

In addition to the faculty Exam developing committees (EDC) and station developers, recruitment of support staff is equally important for a successful OSCE. This should comprise of at least one secretary and a senior person experienced in liaising with logistic and support services people to resolve the physical issues. The following are the major responsibilities of the support staff:

Major Responsibilities of OSCE support staff

- Photocopying, Preparing and distributing materials
- Setting up individual stations
- Attending the needs of examinees, examiners and simulated patients
- Developing the OSCE map
- Setting up the bell system
- Developing and placing the number and arrow sign at appropriate places
- Arrangement of required material and equipment
- Quarantine arrangements for examinees waiting for their exam ∼ Collecting answer sheets from every station and examiner
- Catering for all personnel involved during the day of exam

Training Standardized patients (SPs)

Patients form an integral part of an OSCE as many of the stations requires active patient participation. Developing a pool of trained standardized patients refer to the continuum of patients used in clinical examinations, from the real patient with clinical signs who receives no training to the rigorously trained simulated patient. During OSCE examination it may be difficult to find real patients with similar clinical features for more than one OSCE circuits. In such conditions the use of simulated patients is preferable because of their availability, more easily reproduce the same case for all examinees, and able to give feedback (if necessary) as well as providing opportunities for sensitive consultations. It has been shown that a well-trained simulated patient can be used not only to present the patient in a consistent and reliable manner, but also to evaluate the clinical skills of the examinee.

The recruitment of standardized patients will depend upon the desired outcomes of the station and the role expected to be played by them. If the station requires the candidate to elicit a specific clinical sign, e.g. a heart murmur, a real patient with the murmur in question must be used. However, if the focus of the station is to determine if the candidate can competently examine the cardiovascular system (regardless of any clinical abnormality) a 'healthy' volunteer can be used instead. Certain stations, such as history taking and communication skills stations will generally require the use of trained simulated patients. OSCE station writers/Developers

shall provide a detailed description on choosing the correct 'patient type' for the examination in question.

The exam centers can recruit patients in a number of ways; real patients with clinical signs can be accessed through contacts with primary and secondary care physicians. Healthy volunteers can be found through advertising in the institution, personal contacts and by the word of mouth. it may be desirable to train more than one simulated patients for one station, as being repeatedly interviewed or examined is always tiring and sometimes uncomfortable particularly if the exam is for a longer duration or if the station is demanding. A standardized/simulated patient co-coordinator shall be assigned by the exam centers to undertake the selection process keeping in mind the ability, suitability and credibility of the SPs.

Onsite training Sessions must be arranged at which SPs can be trained by an appropriate and experienced person. The trainer must understand the roles of simulated patients, examiners and specific case requirements. A trainer must also have good teaching skills and be capable of providing constructive feedback. The trainer must obtain a detailed understanding each stations should also be present on the day of exam to deal with any simulated patient problem.

Each of these areas will be discussed in detail in OSCE manual and is beyond the scope of this guide. All relevant information pertaining to the organization and implementation of the OSCE could be held within an OSCE procedure manual that shall be prepared as a separate document for future use & reference.

Time keeper

The role of the time keeper is to maintain the OSCE schedule using bell rings at very precise intervals. The time keeper should remain focused and not be distracted. This task is far more important than the recognition usually given to it. It is also the sort of task which needs a rather obsession type of person to carry out the duty successfully.

Monitor (senior member of the OSCE Committee)

The role of the monitor is also very important because he/she is responsible to directing rotation flow, Identifying and solving issues that may arise with examiners or simulated patients as well as shortages of necessary materials. The monitor shall be assigned by EDC focal person and

would always have the authority to stop the OSCE if the necessity arose, and planned bell rings should be arranged in that event to stop and then later to re-start the OSCE.

Orientation and debriefing of the OSCE exam team

A brief onsite orientation programs shall be designed and conducted by local OSCE coordinators. The coordinator can send out briefing notes to Examiners and simulated or non-standardized patients at least two weeks before the OSCE. On the day of the OSCE Examiners, examinees and patients should be informed to arrive at the examination site at least 30-45 minutes prior to the examination. A special briefing session is needed on the Day of the OSCE is for examinees, although someone must be available to guide examiners and patients to their stations and ensure that they know where to find any essential materials, for example, the marking sheets and clip board.

It is also valuable to have a debriefing meeting for all staffs involved in organizing the OSCE shortly after the examination to review all aspects of content and organization. More value will be added if feedback has been obtained from examiners, simulated patients and a representative of the examinees. This feedback provides useful information about the performance of each station and can assist decisions made to modify and improve stations before being banked for future use.

Organizing the OSCE

Organizingthe OSCE examination generates considerable administrative work. Key administrative activities that needs due consideration for the smooth running of OSCE are described here.

Choosing an OSCE site

Preparing the physical facilities in which the OSCE is to be conducted plays a vital role in the success of the exam. Respective Pre service health professionals' training institutions shall prepare OSCE venue well in advance of the exam date bearing in mind the number of candidates and stations. In addition to housing the examination itself, the venue should ideally have the capacity for briefing rooms, administrative offices, and waiting rooms for examiners, quarantine facilities and refreshment areas. Stations may be accommodated in several small rooms or

alternatively a larger room can be turned into 'station areas' with the use of dividing screens depending on the local context of the institutions.

Setting up the OSCE circuit

The circuit is the term used to describe the setup of stations for the seamless flow of candidates through the examination. Each candidate will individually visit every station within the circuit throughout the course of the examination. As such the layout should be planned to allow the smooth flow of examinees from station to station. The testing area should be mapped, to show station placement, type (for example, unmanned, manned and with patients) and flow patterns. The number of candidates in each sitting should, therefore, be equal to the number of stations, unless rest stations are used. Each candidate will be allocated a start station and move from station to station in the direction of the circuit until all stations have been completed. A team composed of (EDC) and an assigned OSCE assessor will be responsible for setting up the circuit.

- *An illustration of the OSCE circuit that can be plan in a large room is displayed in the below box*

Station 3	Station 4	Station 5	Station 6	Station 7	Station 8	Station 9	Station 10

Station 2

Station 11

Station 1

Station 12

Entry

Waiting and refreshment room

Cloakroom or locked room for personal belonging

Exit

Check point area
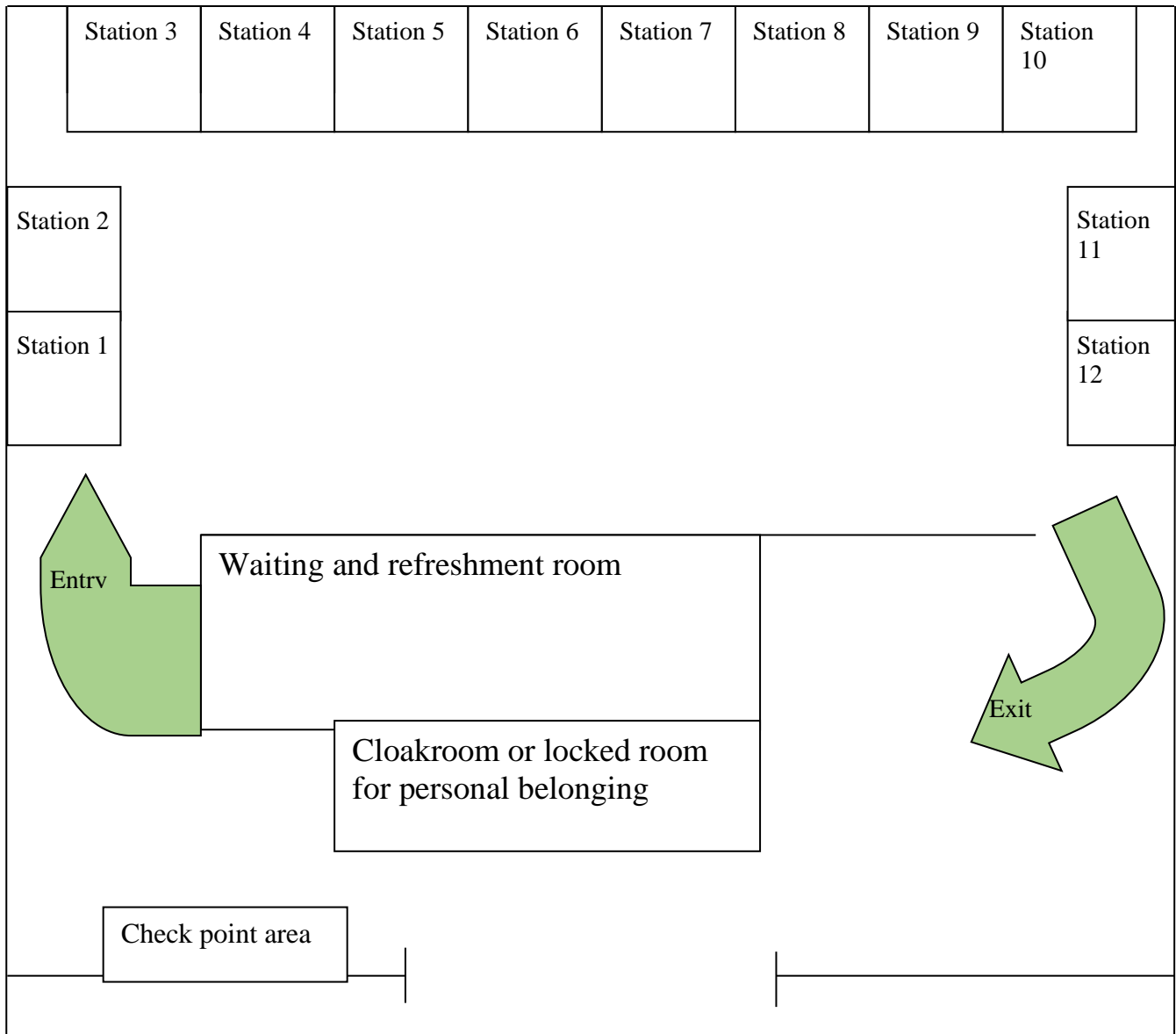
Figure 1: Assessment process flow in OSCE hall

Considerations for individual stations

In setting up individual stations, care must be taken to allocate space appropriate to the tasks, equipment and the personnel. For example, an unmanned station containing investigation results and some written questions would need just enough room for a table and chair, whereas a resuscitation station would need enough space for a manikin, a defibrillator and an examiner.

The stations should provide an appropriate environment for the candidates to perform the procedures. Some stations may also require power sockets for the equipment.

OSCE Equipment

The equipment required for each OSCE station will be included in the documentation developed at the Station writing stage. All equipment shall be sourced well in advance of the OSCE by respective Pre service training institutions in collaboration with the HPCALD, and checked to ensure that it is in good working order. There should be spare equipment available on the day in case of breakages or breakdowns.

Allocation of students to examination centers

If examinations are to be held at multiple sites, planning is required to ensure that wherever possible examiners do not know the candidates and any candidates with disabilities are sent to centers with appropriate facilities.

Transport and reporting instructions

Candidates must be provided with comprehensive instructions about where to report at the examination center. In some circumstances transport may need to be arranged for large groups of candidates.

Distribution of paperwork

Station information, candidates' lists and mark sheets need to be printed, collated and distributed to all examination sites. Mark sheets should be pre-populated with candidates' details to minimize time required during the examination.

Running the OSCE circuit

The movement of the candidates from one station to another can either be arranged by ringing a bell manually or by using automated PowerPoint presentations set up with voice commands clearly instructing the candidates and the examiners. The OSCE starts with the command 'Start Preparation', during which time the candidates read the question, followed one minute later with instructions to 'enter the station'. The next instruction could be 'one-minute left' and the station would end a minute later with the command 'move on'. This cycle shall be repeated for the duration of the examination. if an automated system of commands is used, a back-up in case of technical failure is essential, which could be a simple stopwatch and a bell. Once the

examination is started there should be personnel available to ensure that the candidates move in the right direction.

Quarantine

Quarantine refers to separating those candidates who have completed the examination from those who have yet to take it on the same day. The same set of OSCE stations may be in use for both morning and afternoon sessions, which allows exchange of information. To resolve this issue, candidates scheduled for the early circuits should be 'quarantined' in a separate room until all of the later candidates have arrived and registered. Mobile phones and other devices with the means for remote communication should not be permitted in the examination centers.

Post-OSCE Considerations

On the day of the examination a number of issues can arise and some common issues and their potential solutions need to be timely resolved.Following the examination meticulous collection should be organized as missing sheets can be very prejudicial to a candidate's overall score. It is also helpful to check the Sheets for completeness of scoring and to ask examiners to check they have completed the sheets before leaving. Appeals or complaints made by candidates or examiners needs to be dealt with fairness and promptness. The Local exam committee shall deal with issues as per the policies and procedures of the HPCALD and valid complaints may help to inform changes.

Summary of the recommended standards and guidelines for the delivery of exams:

- An OSCE committee should be appointed with an exam coordinator to supervise the delivery process helped by a support team.
- A suitable exam venue should be chosen, prepared and tested well ahead of the exam day with sufficient space for patients, examiners at their stations and briefing and quarantine rooms for candidates.
- The selection of examiners should be based on specific criteria, including training and contribution/participation in previous OSCEs.

- To reduce variability and improve inter-rater reliability, workshops/training courses must be organized for the purpose of training and orientation of examiners and simulated patients.

- The entry and collation of candidate marks should only be done by support team staff as soon as possible after each OSCE session.

- Instructions, answers and reflection could be done on papers posted and located at each station or preferably in an examinee's OSCE book distributed to candidates at the beginning of the exam.

- Debriefing of examiners, patients, candidate representatives and support staff should be done as soon after the day of the OSCE as is convenient.

- Some of the stations will need to be videoed for standardization purposes and to give further feedback to examiners.

- A workshop has to be delivered by the FMOH to train examiners and station developers.

- Post OSCE examination analysis will be carried out by the monitoring and evaluation team Division of the HPCALD

- Recommendations about station numbers shall be made where the exam reliability falls substantially below 0.80.

Section III. Monitoring and Evaluation of the Exam Program

Fundamental to the proper evaluation of a test are the identification of major sources of measurement error, the size of the errors resulting from these sources, the indication of the degree of reliability to be expected between pairs of scores under particular circumstances, and the generalizability of results across items, forms, raters, administrations, and other measurement facets.

Typically, test developers and publishers have primary responsibility for obtaining and reporting evidence concerning reliability and errors of measurement adequate for the intended uses.

The whole essence of licensing health professionals is to ensure quality of health services provided to the public. To be licensed, health professionals should meet pre-determined standards for entry-level practice. The objectives of licensing examination will be achieved as long as quality of the whole examination process is assured. The HPCALD will establish a section for monitoring and evaluation so as to support quality assurance activities. The section should have a dedicated staff with expertise in quality assurance, assessment, monitoring and evaluation.

The section is expected to develop tools – manuals, guidelines, standards, checklists – deemed necessary for quality assurance, monitoring and evaluation purposes. The section will need to lead, support and follow the use of the various quality assurance mechanisms for the licensing examination processes

Monitoring and Evaluation efforts include evaluating the following critical elements:

1. **Appropriateness of test development procedures**
   - This category includes data related to: the development of test specifications, item development, content validity studies, adherence to item writing guidelines and other indicators of item quality, sensitivity review, item selection criteria, score reliability analyses, and scaling procedures.

2. **Appropriateness of standard setting procedures**

   - This category includes data related to the reasonableness of the standard setting method, selection of standard setting panelists, technical adequacy of the procedure, reliability of the standards, and validation of the standards.

3. **Evidence supporting the validity of score-based inferences**

   - This category includes dimensionality analyses, differential item functioning analyses, test bias analyses, analysis of group differences, and any other construct validity studies.

3.1 Monitoring and Evaluation Matrix

Table 7: *Monitoring and Evaluation Matrix*

	Key Activities	Indicators	Targets	Data Sources	Responsible Body
Focus area 1: Exam content	*1.1 Developing test blue prints*	Development of test blue print based on finding of task Analysis	One per Cadre	Report	The Department
	1.2 conducting item review	Number/percentage of licensing exams reviewed for their contents	All Item Developed shall be Peer Reviewed	Item bank	
	1.3 conducting post exam item Analysis	Number/percentage of items analyzed after the exam Number/percentage of items reviewed and discarded Number of report prepared for post exam item analysis	Item Analysis shall be made for all exam Forms	Report Item bank	
	1.4 conducting pilot test of items	Number/percentage of items pilot tested Number of items revised and included to Q-bank	10% of the Items	Pilot test Report	

	Key Activities	Indicators	Targets	Data Sources	Responsible Body
Focus area 2: Process	*2.1 Recruiting, training and assigning and monitoring of item developers, reviewers and Exam administrators*	Availability of qualified itemdevelopers as per standardsavailability of qualified itemreviewers as per standardsavailability of qualified examadministrators as per standardsnumber of relevant capacity building trainings conducted	TBD		
	2.2 examination administration	All legible examinees are Identified Exam rules and regulations areclearly written and communicated	TBD		
	2.3 Feedback mechanism	Number of report developedand communicated to InstitutionsPercentage of timely resultnotification report given toExaminees Availability of evaluation sessions after examinations Development of reports on exam evaluation	TBD		

	2.4 Remedial Actions	Reexamination Success rate	80%		
	2.5 Standard setting for Scoring	Modified Angoff method Usedfor reviewing standard setting	TBD		
	2.6 establishing item bank	Number of items entered intobank (segregated by type ofcadres, level of competency)access restricted tobankexcept authorized personnel	4*400 (1600)		
	2.7 Exam centers are standardized	Number of exam centers as perstandard availability of materials forpractical examination	30 training Institutions		

Focus Areas 3	Key Activities	Indicators	Targets	Data Sources	Responsible Body
	Output/outcome	Percentage of students passed the first examination, segregated by institutions	70%		
		Percentage of students who got remedial action	100%		
		Number of examinees per class and invigilator(40	40		

3.2 Key quality assurance mechanisms

Item Review

It is conducted by a group of subject matter and education experts (SMEs) to ensure validity, reliability and fairness of examination. Once the first draft of the items is written, the HPCALD should have experts to review the item and validate its appropriateness (matching with the learning objectives on the blueprint), technical accuracy, quality of items (not misleading or tricky), and whether items are clearly worded. Besides, items should be unbiased toward any population, ethnic group or culture (sensitivity test).

After a test form is created, it is extremely important that multiple SMEs (of an oversight group) review it. The SMEs are responsible for identifying items that cue one another and items that are highly similar in content. SMEs also review all the items one more time as a safeguard against having poor items on the examination form.

Making a test form (version) ready for administration requires a thorough revision process by SMEs to ensure that:

- Items on the form match the test blueprint
- There is not great overlap with the previous examination form(s) ~ Items are selected to match the statistical requirements

Pilot Testing

A Licensing examination may contain a small number (up to 10%) of experimental or "pilot" test items. The purpose of this is for psychometric evaluation of these items to expand and improve the item bank from which future examinations will be drawn. This is a critical step in ensuring the continued reliability and validity of these examinations. In the event that pilot test questions are included within the examination, these questions will not be counted when computing scores. Additional time will be given for answering the pilot test questions. The time allowed for testing has been evaluated to ensure there is adequate time for completing test questions and pilot questions. Pilot questions should NOT be identified. If the pilot questions were identified, many of the candidates would skip them, and the results would not be valid. The development of a good examination requires accurate candidate response information for test items.

Post Examination Item Analysis

Item analysis should be planned and conducted 1 – 2 months after exam administration to check the level of difficulty and discrimination of each item. The purpose of item analysis is to identify which items are effective in the assessment process. The analysis for such scale of examinations is conducted by commercial software. Trained education and subject matter experts should also be assigned to conduct the process. Throughout the process, the test developer should be maintaining a record of the items written and analyzed. All items accepted should be denoted as potential exam items. Items not accepted during the analysis should be flagged so that they are not used in any exam forms. While the other items acceptable by analysis process can be used for examination.

Need-based capacity building

Short term trainings on assessment, exam administration, and quality assurance will be conducted based on the technical gaps of item writers, reviewers and administrators. In addition, the HPCALD will conduct other relevant trainings that would improve its overall performance – project management, research, etc… as deemed necessary

Undertaking operational research

The HPCALD needs to conduct and support the undertaking of operational research to identify gaps of licensure examination procedures, policies and practices. The findings of research should be helpful to inform decisions and make adjustments.

Experience sharing

The HPCALD shall conduct benchmarking visits and consultative meetings with similar organizations in the country and internationally. Using these opportunities, best lessons will be adapted and scaled-up. As a new organization, the HPCALD shall be proactive in seeking collaboration and opportunities for cooperation with similar organizations and institutions for the betterment of its services.

Section IV. Roles and responsibilities of Key stakeholders

❖ *Ministry of Health*

- Develops policy and regulatory framework
- Establishes and chairs the Health Professionals' Competency Assessment and Licensure Directorate
- Organizes awareness creation and advocacy meetings with key stakeholders (students, training institutions, professional associations, employers)
- Mobilizes resources for developing and conducting of licensing exam
- Coordinates and sponsors the Health Professionals' Competency Assessment and LicensureExamination
- Ensures graduates acquire license before entering the health workforce
- Monitors and evaluates effectiveness of the licensing examination
- Conduct periodic impact assessment
- Provides feedback to training institutions for quality improvement

❖ *Ministry of Education*

- Participates actively and be represented in the directorate
- Encourages higher education institutions to actively participate in the development and administration of the licensing examination
- Supports higher education institutions to prepare optimal infrastructure for the licensing exam
- Encourages higher education institutions to implement recommendations for enhancing quality of education

❖ *Higher Education Institutions*

- Provide faculty to serve as exam developers and assessors
- Prepare and submit list of eligible candidates to the HPCALD
- Prepare the necessary infrastructure and logistics to conduct the exam including sharing costs for external assessors

- Participate in feedback provision and assessment to improve validity and reliability of the licensing examination
- Utilize feedback from the HPCALD regarding quality and relevance of their education program

❖ *National Educational Assessment and Examinations Agency (NEAEA)*

- Provides technical assistance in the development of exam items, validation of items, standard setting, administration and management as well as post exam analysis
- Supportsthe HPCALD in financial administration and management of exam related activities.

❖ *Higher Education Strategic Center (HESC)*

- Participates in the NHPCLE
- Provides direction to higher education institutions to reform their education programs
- Ensures alignment of the licensing exam with qualification frameworks and curricular objectives or learning outcomes
- Monitors and evaluates effectiveness of the licensing exam

❖ *Higher Education Relevance and Quality Agency (HERQA)*

- Participates in NHPCLE
- Supports and monitors implementation of the recommendations for quality improvement
- Considers licensing exam results in re-accreditation of education institutions
- Monitors and evaluates effectiveness of the licensing exam
- Participates in impact assessment

❖ *Professional Associations*

- Participate in joint task analysis studies
- Help identify experts for developing and administering licensing exam
- Provide technical assistance at all stages of licensing exam development, validation, standard setting, administration, management, and monitoring and evaluation
- Actively participate in the establishment of professional councils

❖ *Development Partners*

- Participates in NHPCLE based on availability of relevant expertise
- Provide technical assistance/capacity building training and mentoring at different stages of licensing exam development, validation, standard setting, administration, management, and monitoring and evaluation
- Provide infrastructure strengthening support

❖ *Students*

- Will be represented in the NHPCLE
- Fulfill requirements to sit for licensing exam including payment for the exam (exam fee) in the long-term
- Successfully complete all steps of the prescribed licensing exam
- Participate in feedback provision and assessment to improve validity and reliability of the licensing exam

❖ *Patients, families, patient support groups*

- Will be represented in the HPCALE through their associations
- Provide inputs in task analysis studies to accurately reflect healthcare needs of the population/community
- Provide inputs in impact assessment to accurately document changes in healthcare quality and patient safety.

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Glossary

Content specification/content outline: This is a standard for test item development. It shows the contents of items specifically classified as "category level 1, 2, and 3" or "subject-field-domain-specific domain-item".

Item bank / item pool: The item bank is a place where the completed test items following the process of test item development, review and screening are stored. They are stored in a computer with related information on items including their characteristics.

Item development (item writing): It is a procedure where an item writer develops test items based on content specification.

Item review: Item review is a procedure whereby related specialists review the developed items to make sure that they can be used in constructing a test.

Item screening: This is a procedure whereby subject experts screen the reviewed items and decide by certain standards which to keep unchanged, which to keep after modification and which to dispose of.

Item: An item refers to a question which has been developed for the test, yet been used and is stored in the item bank.

Standards of test construction: The standards of test construction are composed of test subjects, category level 3, field (or domain), the number of test items, and score allocation. Test construction (Exam Assembly): It is a procedure whereby items are selected from the item bank to construct a test.

Test item: A test item refers to an item that is selected from the item bank and printed on the test paper.

Annex I: Item Review checklist (MCQs)

Item Type

Date Written

Item Developer

Reviewers

Review Date

Areas to be Reviewed	Activities	Check
Content	The item addresses the desired domain of knowledge and corresponds to the exam blueprint.	
	It measures knowledge or a skill component which is worthwhile and appropriate for the examinees who will be tested	
	There is a no better way to test what this item tests	
	The level of difficulty is appropriate for the examinees that will be tested.	
	The item is focused on current standards of practice	
	The item tests higher order thinking.	
	No grammatical, punctuation, and spelling errors.	
	The item is free from demeaning, offensive, or stereotypical content	
Issues Related to Test wise-ness	Grammatical cues - one or more distracters don't follow grammatically from the stem	
	Logical cues - a subset of the options is collectively exhaustive	
	Absolute terms - terms such as "always" or "never" are in some options	
	Long correct answer - correct answer is longer, more specific, or more complete than other options	
	Word repeats - a word or phrase is included in the stem and in the correct answer	

	Convergence strategy - the correct answer includes the most elements in common with the other options	
Issues Related to Irrelevant Difficulty	Options are long, complicated, or double	
	Numeric data are not stated consistently	
	Terms in the options are vague (eg, "rarely," "usually")	
	Language in the options is not parallel	
	Options are in a non-logical order	
	"None of the above" is used as an option	
	Stems are tricky or unnecessarily complicated	
	The answer to an item is "hinged" to the answer of a related item	
Correct (Keyed) Answer	Placement of the correct answer has been varied	

Comments: _____

Annex-II Checklist for reviewing OSCE

Station Type

Date developed

station

Developer

Reviewers

Review Date

Areas to be Reviewed	Activities	Check
OSCE station	The prepared station corresponds to the exam blueprint.	
	Examinees sheet is prepared that includes the station profile, the opening statement (scenario or preface) and the candidate instructions	
	Examiner's sheet contains the station profile and the examiner's instructions accompanied by a scoring form (checklist or rating scales).	
	Tasks and instructions for the support team are prepared describing the members of the team and their responsibilities.	
	Instructions to the standardized patient are detailed enough	
	Station labels, instructions and directions are prepared	
	All necessary equipment to perform the procedure are available at the station and are functional.	
The OSCE scenario	Prepares the mindset of the examinee and provides a semi-real-life situation	
	Stated in the patient's language rather than technical medical terminology.	

	Provides sufficient information to guide the examinee to the required task (not too much, not too little)	
The OSCE checklist	The number of items on the checklist is proportional to the case and the time allotted.	
	Each item represents only one concept.	
	Items on the checklist are observable skills.	
	Each checklist item begins with an action verb	
	The item focuses on current standards of practice.	
	Contains an explicit marking system	

Comments: _____

Annex III: Request form for special Accommodation

Please complete this form and the Documentation ofDisability-RelatedNeedsonthereversesideandsubmititwithyourapplicationatleast30dayspriortoyour requested examination date. The information you provide and any documentation regarding your disability and your need for accommodation in testing will be treated with strict confidentiality.

CandidateInformation

Candidate ID # _____

Requested Test Center:_____

Name (First,Middle &Last)

Mailing Address

Telephone Number   Email Address

Special Accommodations

I request special accommodations for the _____ examination.

Please provide (check all that applies):

_____ Reader

_____ Extended testing time (time and a half)

_____ Reduced distraction environment

_____ Please specify below if other special accommodations are needed.

Comments: _____

PLEASE READ AND SIGN:

I give my permission for my diagnosing professional to discuss with HPCALD staff about my records and history as they relate to the requested accommodation.

Signature: _____ Date: _____

Ministry of Health
Health Professionals' Competency Assessment and Licensure Examination
Candidate Comment Form

Name of candidate:	**Date:**
Sex:	
Professional category:	
Exam center:	
General comment from construction of the exam, difficulty level, examiners	
Specific comment of questions:	

Health Professionals' Competency Assessment and Licensure Examination
Incident report form

Type of incident:

Course ID:	Health Professional Category:_____
Paper title:	
Exam Start Time:	Date:
Time of Incident:	Time of Incident:
Candidate ID:	Academic Year_____
Candidate Name:	

Details of Incident & Action Taken (please print):

Suspected Academic Dishonesty Notice issued   ☐ YES ☐   NO
Copy of Suspected Academic Dishonesty Notice attached   ☐ YES ☐   NO
Confiscated Items (list):

Name of Supervisor:	Signature:

Additional action taken (please print):

Attachments:		
Name of Supervisor:	Signature:	
	Date:	
Also witnessed by Supervisor:	Signature:	
	Date:	
Additional Comments:		
Examinations Office use:		
Signature:	Date:	