GLOSSARY OF MEDICAL EDUCATION TERMS*

The Terms	Definitions
Academic counselling* **	*Academic counselling* would include questions related to choice of electives, residence preparation and career guidance. Organisation of the counselling would include appointing academic mentors for individual students or small groups of students
Academic freedom **	*Academic freedom* would include appropriate freedom of expression, freedom of inquiry and publication for staff and students
Academic leadership **	*Academic leadership* refers to the positions and persons within the governance and management structures being responsible for decisions on academic matters in teaching, research and service and would include dean, deputy dean, vice deans, provost, heads of departments, course leaders, directors of research institutes and centres as well as chairs of standing committees (e.g. for student selection, curriculum planning and student counselling)
Accrediting agencies*	legal entities that develop set of Standards (Guidelines) and accredit of the HEIs that as the institutions meet predefined quality Standards (Guidelines)
Accreditation of Higher Education Institutions* **	recognition procedure used in higher education by accreditation agency that confirms the Education, Research and Service compliance with and meet predefined standards (guidelines)in order to provide the evidence about their quality and improvement of the internal quality assurance mechanisms
Adjustment of number and nature of examinations **	*Adjustment of number and nature of examinations* would include consideration of avoiding negative effects on learning. This would also imply avoiding the need for students to learn and recall excessive amounts of information and curriculum overload
Addressing social, financial and personal needs **	*Addressing social, financial and personal needs* would mean professional support in relation to social and personal problems and events, health problems and financial matters, and would include access to health clinics, immunization programmes and health/disability insurance as well as financial aid services in forms of bursaries, scholarships and loans
Appropriate student conduct **	*Appropriate student conduct* would presuppose a written code of conduct
Appropriate clinical	*Appropriate clinical responsibility* would include activities related to health promotion, disease prevention and patient care

responsibility**	
Assessment**	A system of evaluation of professional accomplishments using defined criteria and usually including an attempt at measurement either by grading on a rough scale or by assigning numerical value. The purpose of assessment in an educational context is to make a judgment about the level of skills or knowledge, to measure improvement over time, to evaluate strengths and weaknesses, to rank students for selection or exclusion, or to motivate. Assessment should be as objective and reproducible as possible. A reliable test should produce the same or similar scores on two or more occasions or if given by two or more assessors. The validity of a test is determined by the extent to which it measures whatever it sets out to measure. One can distinguish three types of assessment: a) Formative assessment is testing that is part of the developmental or on-going teaching/learning process. It should include delivery of feedback to the student. b) Summative assessment is testing which often occurs at the end of a term or course, used primarily to provide information about how much the student has learned and how well the course was taught. c) Criterion-referenced assessment refers to testing against an absolute standard such as an individual's performance against a benchmark.
Assessment utility***	*"Assessment utility"* is a term combining validity, reliability, educational impact, acceptability and efficiency of the assessment methods and formats
Assessment principles, methods and practices***	*Assessment principles*, *methods and practices* refer to assessment of student achievement and would include assessment in all domains: knowledge, skills and attitudes
Association for Medical Education in Europe (AMEE)****	A worldwide association concerned with education in the medical and health professions, including teachers, curriculum developers, deans, administrators, researchers and students. AMEE works across the continuum of education to promote its quality, facilitate and develop high quality research, and serve as a source of advice on matters relating to medical education. AMEE assists with the development of skills required by medical teachers and facilitates the exchange of information in the rapidly changing world of medical education. AMEE's activities include: annual conferences; publications including the peer-reviewed journal Medical Teacher; courses such as Essential Skills in Medical Education (ESME); Best Evidence Medical Education (BEME) Collaboration; and the

	MedEdWorld website. www.amee.org/index.asp www.mededworld.org, *www.amee.org*
Attitude****	Critical thinking is the ability to apply higher-order cognitive skills (conceptualization, analysis, evaluation) and the disposition to be deliberate about thinking (being open-minded or intellectually honest) that lead to action that is logical and appropriate. Papp et al. (2014) have developed a model of five stages of critical thinking: (1) Unreflective thinker; (2) Beginning critical thinker; (3) Practicing critical thinker; (4) Advanced critical thinker; and (5) Accomplished critical thinker.
The authority of the curriculum committee**	*The authority of the curriculum committee* would include authority over specific departmental and subject interests, and the control of the curriculum within existing rules and regulations as defined by the governance structure of the institution and governmental authorities. The curriculum committee would allocate the granted resources for planning and implementing methods of teaching and learning, assessment of students and course evaluation
Basic medical education**	Undergraduate medical education
Basic medical sciences****	Basic medical sciences are taught as part of the medical curriculum to provide an overview of fundamental scientific theories and concepts for clinical application. Subjects traditionally taught as part of the medical curriculum include anatomy, histology, physiology, biochemistry and pathology. The current teaching model includes genetics, cell and molecular biology, epidemiology, nutrition and energy metabolism, and the science of healthcare delivery and bioinformatics. Following the Flexner model, basic medical sciences were traditionally taught before clinical exposure. However, the dominant teaching model has shifted to a more integrated approach, and either paired with related clinical disciplines are taught in blocks by organ system.
Behavioural and social sciences**	*Behavioural and social sciences* would - depending on local needs, interests and traditions - include biostatistics, community medicine, epidemiology, global health, hygiene, medical anthropology, medical psychology, medical sociology, public health and social medicine
The behavioural and social sciences, medical ethics and medical jurisprudence**	*The behavioural and social sciences, medical ethics and medical jurisprudence* would provide the knowledge, concepts, methods, skills and attitudes necessary for understanding socio-economic, demographic and cultural determinants of causes, distribution and consequences of health problems as well as knowledge about the national health care system and

	patients' rights. This would enable analysis of health needs of the community and society, effective communication, clinical decision making and ethical practices
Benchmark****	A standard or point of reference against which things may be compared.
Bloom's taxonomy****	Bloom's taxonomy is a classification system used to define and distinguish different levels of human cognition—i.e., thinking, learning, and understanding. Bloom's taxonomy was originally published in 1956 by a team of cognitive psychologists at the University of Chicago. It is named after the committee's chairman, Benjamin Bloom (1913–1999). The original taxonomy was organized into three domains: Cognitive, Affective, and Psychomotor. Educators have primarily focused on the Cognitive model, which includes six different classification levels: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. The group sought to design a logical framework for teaching and learning goals that would help researchers and educators understand the fundamental ways in which people acquire and develop new knowledge, skills, and understandings. Their initial intention was to help academics avoid duplicative or redundant efforts in developing different tests to measure the same educational objectives. Some users of the taxonomy place more emphasis on the hierarchical nature of the framework, asserting that the first three elements—Knowledge, Comprehension, and Application—represent lower levels of cognition and learning, while Analysis, Synthesis, and Evaluation are considered higher-order skills. For this reason, the taxonomy is often graphically represented as a pyramid with higher-order cognition at the top. In 2001, another team of scholars—led by Lorin Anderson, a former student of Bloom's, and David Krathwohl, a Bloom colleague who served on the academic team that developed the original taxonomy—released a revised version of Bloom's taxonomy called A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. The "Revised Bloom's Taxonomy," as it is commonly called, was intentionally designed to be more useful to educators and to reflect the common ways in which it had come to be used in schools. In the revised version, three categories were renamed and all the categories were expressed as verbs rather than nouns. Knowledge was changed to Remembering, Comprehension became Understanding, and Synthesis was renamed Creating.

	In addition, Creating became the highest level in the classification system, switching places with Evaluating. The revised version is now Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating, in that order.
Best practice****	Professional procedures that are accepted or prescribed as being correct or most effective.
Blueprint****	A template used to define the content of a test that may be designed as a matrix or a series of matrices. This can be used to ensure that the assessments used in the assessment cover all the competencies required by the curriculum.
Bologna Process****	The overarching aim of the Bologna Process (http://www.ond.vlaanderen.be/hogeronderwijs/bologna/about/) is to create a European Higher Education Area (EHEA) based on international cooperation and academic exchange that is attractive to European students and staff as well as to students and staff from other parts of the world. The envisaged European Higher Education Area will: • facilitate mobility of students, graduates and higher education staff • prepare students for their future careers and for life as active citizens in democratic societies, and support their personal development • offer broad access to high-quality higher education, based on democratic principles and academic freedom. The Bologna Process is named after the Bologna Declaration which was signed in the Italian city of Bologna on 19 June 1999 by ministers in charge of higher education from 29 European countries http://www.ond.vlaanderen.be/hogeronderwijs/bologna/
Case-based learning (CBL)****	A form of inquiry-based learning that aims to prepare students for clinical practice, through the use of authentic clinical cases.
Clinical Competence****	The mastery of relevant knowledge and the acquisition of a range of relevant skills at a satisfactory level including interpersonal, clinical and technical components at a certain point of education, i.e., at graduation. In the case of clinical training, which is primarily based on an apprenticeship model, teachers define what the student is expected to do and then test their ability to do it. However, in actuality, most clinical actions are concerned with problems for which there are no clear answers and no single solution. In such situations, an experienced doctor searches his or her mind and sifts through a wide range of options and in some cases the solution will be something he or she has never arrived at before. Therefore, competence itself is only of value as a prerequisite for

	performance in a real clinical setting and does not always correlate highly with performance in practice.
Clinical skills**	*Clinical skills* include history taking, physical examination, communication skills, procedures and investigations, emergency practices, and prescription and treatment practices
Clinical training facilities**	*Clinical training facilities* would include hospitals (adequate mix of primary, secondary and tertiary), sufficient patient wards and diagnostic departments, laboratories, ambulatory services (including primary care), clinics, primary health care settings, health care centres and other community health care settings as well as skills laboratories, allowing clinical training to be organised using an appropriate mix of clinical settings and rotations throughout all main disciplines
Criteria for admission***	*Criteria for admission* might include documentation of proven research competence through, for example, predoctoral research programmes and published papers, achievements in previous studies, and – for medical candidates - clinical experience
Communication Skills******	The term denotes proficiency in the interchange of information. These are essential skills for clinical practitioners because of the large and varied number of people they must communicate with every day. The idea that doctors automatically learn communication through experience or that doctors are inherently either good or bad communicators is being largely abandoned. It is now widely believed that such skills can be taught to both students and doctors by a variety of professionals including doctors and specialists in communication skills as an important part of undergraduate as well as postgraduate and continuing medical education.
Continuing Medical Education (CME)******	A continuous process of acquiring new knowledge and skills throughout one's professional life. As undergraduate and postgraduate education is insufficient to ensure lifelong physicians' competencies, it is essential to maintain the competencies of physicians, to remedy gaps in skills, and to enable professionals to respond to the challenges of rapidly growing knowledge and technologies, changing health needs and the social, political and economic factors of the practice of medicine. Continuing medical education depends highly upon learner motivation and self-directed learning skills. See also Life-Long Learning; Continuing Professional Development (CPD); Faculty Development.
Curriculum******	A curriculum is a sophisticated blend of educational strategies, course content, learning outcomes, educational experiences, assessment, the educational environment and the individual

	students' learning style, personal timetable and the programme of work.
Courses* **	The *courses* would include courses in ethics, safety, animal experimentation (if applicable), research methodology and statistics and elective discipline-specific components to support candidates in their scientific research
Early patient contact**	*Early patient contact* would partly take place in primary care settings and would primarily include history taking, physical examination and communication
Educational expertise**	*Educational expertise* would deal with processes, practice and problems of medical education and would include medical doctors with research experience in medical education, educational psychologists and sociologists. It can be provided by an education development unit or a team of interested and experienced teachers at the institution or be acquired from another national or international institution
Educational programme accreditation*	*Educational programme accreditation* recognition procedure used in higher education by accreditation agency that confirms the educational programmes compliance with and meet predefined standards (guidelines) in order to provide the evidence about their quality and improvement of the internal quality assurance mechanisms
Educational outcomes or learning outcomes/ Competencies**	*Educational outcomes* or learning outcomes/competencies refer to statements of knowledge, skills and attitude that students demonstrate at the end of a period of learning. Outcomes might be either intended or acquired. Educational/learning objectives are often described in terms of intended outcomes. Outcomes within medicine and medical practice - to be specified by the medical school - would include documented knowledge and understanding of (a) the basic biomedical sciences, (b) the behavioural and social sciences, including public health and population medicine, (c) medical ethics, human rights and medical jurisprudence relevant to the practice of medicine, (d) the clinical sciences, including clinical skills with respect to diagnostic procedures, practical procedures, communication skills, treatment and prevention of disease, health promotion, rehabilitation, clinical reasoning and problem solving; and (e) the ability to undertake life-long learning and demonstrate professionalism in connection with the different roles of the doctor, also in relation to the medical profession. The characteristics and achievements the students display upon graduation can e.g. be categorised in terms of the doctor as (a) scholar and scientist, (b) practitioner, (c) communicator, (d) teacher, (e) manager and (f) a professional.

Elements of original or advanced research* **	*Elements of original or advanced research* would include obligatory or elective analytic and experimental studies, thereby fostering the ability to participate in the scientific development of medicine as professionals and colleagues
Encompassing the health needs of the community **	*Encompassing the health needs of the community* would imply interaction with the local community, especially the health and health related sectors, and adjustment of the curriculum to demonstrate attention to and knowledge about health problems of the community
Encouragement of integrated learning **	*Encouragement of integrated learning* would include consideration of using integrated assessment, while ensuring reasonable tests of knowledge of individual disciplines or subject areas
Effective and ethical use **	*Effective and ethical use* of information and communication technology would include use of computers, cell/mobile telephones, internal and external networks and other means as well as coordination with library services. The policy would include common access to all educational items through a learning management system. Information and communication technology would be useful for preparing students for evidence-based medicine and life-long learning through continuing professional development (CPD)
Evaluate* **	*Evaluate* would include evaluation of appropriateness and quality for medical training programmes in terms of settings, equipment and number and categories of patients, as well as health practices, supervision and administration
Evaluation** **	A process that attempts to systematically and objectively determine the relevance, effectiveness, and impact of activities in light of their objectives. Evaluation can be related to structure, process, or outcome. One can distinguish these various types: • Formative individual evaluation provides feedback to an individual (usually a learner) in order to improve that individual's performance. This type of evaluation identifies areas for improvement and provides specific suggestions for improvement serving as an educational tool. • Summative individual evaluation measures whether specific objectives were accomplished by an individual in order to place a value on the performance of that individual. It may certify competency or lack of competency in performance in a particular area. • Formative programme evaluation provides information in order to improve a programme's performance. It usually takes the form of surveys of learners to obtain feedback about and suggestions for improving a curriculum. Quantitative

	information such as ratings of various aspects of the curriculum can help identify areas that need revision. Qualitative information, such as responses to open-ended questions about programme strengths and weaknesses, as well as suggestions for change, provide feedback in areas that may not have been anticipated and provide ideas for improvement. Information can also be obtained from faculty or other observers, such as nurses and patients. • Summative programme evaluation measures the success of a curriculum in achieving learner objectives for all targeted learners, its success in achieving its process objectives, and/or its success in engaging, motivating, and pleasing its learners and faculty. In addition to quantitative data, summative programme evaluation may include qualitative information about unintended barriers or unanticipated effects encountered in programme implementation. Formative evaluations generally require the least amount of rigor, whereas summative individual and summative programme evaluation for external use (e.g., certification of competence) requires the greatest amount of rigor. When a high degree of methodological rigor is required, the measurement instrument must be appropriate in terms of content, reliability, validity, and practicality.
Facilitate student activities**	To *facilitate student activities* would include consideration of providing technical and financial support to student organisations
Further competencies***	*Further competencies* include leadership, ability to supervise work of others, project management and ability to teach
Governance***	*Governance* means the act and/or the structure of governing the medical school. Governance is primarily concerned with policy making, the processes of establishing general institutional and programme policies and also with control of the implementation of the policies. The institutional and programme policies would normally encompass decisions on the mission of the medical school, the curriculum, admission policy, staff recruitment and selection policy and decisions on interaction and linkage with medical practice and the health sector as well as other external relations
International ethical standards***	*International ethical standards* are e.g. Helsinki Declaration II (clinical), EU Directive 2010/63/EU (animal), and Oviedo Convention (bioethics)
Institutional accreditation *	*Institutional accreditation* external evaluation by the accrediting agency and its formal and independent decision indicating that a higher education institution meets certain predefined standards and current status as the HEI

International accreditation*	*International accreditation* external evaluation of the higher education institutions (institutional accreditation) or educational programmes (specialized accreditation) that meet predefined standards (guidelines)and its should be carried out by the national or foreign accrediting agency recognized and listed on Register #1 of the Kazakhstan Ministry of Education and Science
Internationally recognized journals***	By *internationally recognized journals* is meant good quality journals in the field concerned that are included in PubMed, Science Citation Index, or similar biomedical and health science literature databases
Institutional autonomy**	*Institutional autonomy* would include appropriate independence from government and other counterparts (regional and local authorities, religious communities, private cooperations, the professions, unions and other interest groups) to be able to make decisions about key areas such as design of curriculum, assessments, students admission, staff recruitment/selection and employment conditions, research and resource allocation
Instructional/ learning methods**	*Instructional/learning methods* would encompass lectures, small-group teaching, problem-based or case-based learning, peer assisted learning, practicals, laboratory exercises, bed-side teaching, clinical demonstrations, clinical skills laboratory training, field exercises in the community and web-based instruction
Life-long learning**	*Life-long learning* is the professional responsibility to keep up to date in knowledge and skills through appraisal, audit, reflection or recognised continuing professional development (CPD)/continuing medical education (CME) activities. CPD includes all activities that doctors undertake, formally and informally, to maintain, update, develop and enhance their knowledge, skills and attitudes in response to the needs of their patients. CPD is a broader concept than CME, which describes continuing education in the knowledge and skills of medical practice
Management***	*Management* means the act and/or the structure concerned primarily with the implementation of the institutional and programme policies including the economic and organisational implications i.e. the actual allocation and use of resources within the medical school. Implementation of the institutional and programme policies would involve carrying into effect the policies and plans regarding mission, the curriculum, admission, staff recruitment and external relations
Medical Education****	The process of teaching, learning and training of students with an on-going integration of knowledge, experience, skills,

	qualities, responsibility and values which qualify an individual to practice medicine. It is divided into undergraduate, postgraduate and continuing medical education, but increasingly there is a focus on the "lifelong" nature of medical education. Undergraduate education or basic medical education refers to the period beginning when a student enters medical school and ends with the final examination for basic medical qualification. This period of education comprises a pre-clinical and a clinical period. It can result in granting a license to practice, which may be provisional and subject to conditions as to supervision; or permitting the start of postgraduate education. In the United States, however, undergraduate education refers to pre-medical college education, which results in a Bachelor's degree and is the training most students receive before entering medical school. Postgraduate education, graduate medical education or specialty training is used to designate the more or less continuous period of post-basic training which, when it occurs, normally directly follows undergraduate training and is designed to lead to competence in a chosen branch of medical practice. .
Medical ethics**	*Medical ethics* deals with moral issues in medical practice such as values, rights and responsibilities related to physician behavior and decision making
Medical jurisprudence**	*Medical jurisprudence* deals with the laws and other regulations of the health care delivery system, of the profession and medical practice, including the regulations of production and use of pharmaceuticals and medical technologies (devices, instruments, etc.)
Medical research and scholarship***	*Medical research* and *scholarship* encompasses scientific research in basic biomedical, clinical, behavioural and social sciences. Medical scholarship means the academic attainment of advanced medical knowledge and inquiry. The medical research basis of the curriculum would be ensured by research activities within the medical school itself or its affiliated institutions and/or by the scholarship and scientific competencies of the teaching staff. Influences on current teaching would facilitate learning of scientific methods and evidence-based medicine
Mission**	*Mission* provides the overarching frame to which all other aspects of the educational institution and its programme have to be related. Mission statement would include general and specific issues relevant to institutional, national, regional and global policy and needs. Mission in this document includes the institutions' vision

National accreditation*	*National accreditation* external evaluation of the higher education institutions (institutional accreditation) or educational programmes (specialized accreditation) that meet predefined standards (guidelines)and its should be carried out by the national accrediting agency recognized and listed on Register #1 of the Kazakhstan Ministry of Education and Science
Other stakeholders***	*Other stakeholders* would include representatives of other health professions, patients, the community and public (e.g. users of the health care delivery systems, including patient organisations). Other stakeholders would also include other representatives of academic and administrative staff, education and health care authorities, professional organisations, medical scientific societies and postgraduate medical educators
Patients***	*Patients* may include validated simulation using standardised patients or other techniques, where appropriate, to complement, but not substitute clinical training
Participation in patient care**	*Participation in patient care* would include responsibility under supervision for parts of investigations and/or treatment to patients, which could take place in relevant community settings
Patient safety**	*Patient safety* would require supervision of clinical activities conducted by students
Periodically review the admission policy***	*Periodically review the admission policy* would be based on relevant societal and professional data, to comply with the health needs of the community and society, and would include consideration of intake according to gender, ethnicity and other social requirements (socio-cultural and linguistic characteristics of the population), including the potential need of a special recruitment, admission and induction policy for underprivileged students and minorities
Physical facilities***	*Physical facilities* would include lecture halls, class, group and tutorial rooms, teaching and research laboratories, clinical skills laboratories, offices, libraries, information technology facilities and student amenities such as adequate study space, lounges, transportation facilities, catering, student housing, on-call accommodation, personal storage lockers, sports and recreational facilities
PhD qualification***	*The PhD qualification* corresponds to level 8 in the European Qualifications Framework
Policy and practice for admission of disabled	*Policy and practice for admission of disabled students* will have to be in accordance with national law and regulations

students**	
A policy for transfer of educational credits**	A *policy for transfer of educational credits* would imply consideration of limits to the proportion of the study programme which can be transferred from other institutions. Transfer of educational credits would be facilitated by establishing agreements on mutual recognition of educational elements and through active programme coordination between medical schools. It would also be facilitated by use of a transparent system of credit units and by flexible interpretation of course requirements
Postgraduate medical education***	*Postgraduate medical education* would include preregistration education (leading to right to independent practice), vocational/professional education, specialist/subspecialist education and other formalised education programmes for defined expert functions
Principles of equality**	*Principles of equality* mean equal treatment of staff and students irrespective of gender, ethnicity, religion, sexual orientation, socio-economic status, and taking into account physical capabilities
Principal stakeholders***	*Principal stakeholders* would include the dean, the faculty board/council, the curriculum committee, representatives of staff and students, the university leadership and administration, relevant governmental authorities and regulatory bodies
Problem-Based Learning (PBL)****	In this approach, students learn in small groups supported by a tutor. They initially explore a predetermined problem. The problem contains triggers designed to evoke objectives or concepts which are used to set the agenda for individual or group investigation and learning after the initial session. Subsequent group meetings permit students to monitor their achievements and to set further learning goals as required. The tutor's role is to offer support for learning and to help reach the expected outcomes. PBL enables students to develop the ability to translate knowledge into practice at an early stage, encourages individual participation in learning and also allows the development of teamwork skills. Students in PBL courses have been found to place more emphasis on "meaning" (understanding) than "reproduction" (memorization). Students must engage in a significant amount of self-directed learning; lectures are kept to a minimum. PBL originated at McMaster University in Canada, and then at Maastricht University, and is now widely adopted in medical schools in many countries. Each school makes its own adjustments to the basic model. It does require a heavy investment in resources (library books, IT, tutorial rooms) as well as requiring education and training for tutors.

Programme monitoring* **	*Programme monitoring* would imply the routine collection of data about key aspects of the curriculum for the purpose of ensuring that the educational process is on track and for identifying any areas in need of intervention. The collection of data is often part of the administrative procedures in connection with admission of students, assessment and graduation
Programme evaluation **	*Programme evaluation* is the process of systematic gathering of information to judge the effectiveness and adequacy of the institution and its programme. It would imply the use of reliable and valid methods of data collection and analysis for the purpose of demonstrating the qualities of the educational programme or core aspects of the programme in relation to the mission and the curriculum, including the intended educational outcomes. Involvement of external reviewers from other institutions and experts in medical education would further broaden the base of experience for quality improvement of medical education at the institution
Professional skills **	*Professional skills* would include patient management skills, team-work/team leadership skills and inter-professional training
Quality Assurance** **	A system of procedures, checks, audits, and corrective actions to ensure that all research, testing, monitoring, sampling, analysis, and other technical and reporting activities are of the highest achievable quality. Quality assurance serves to benefit the quality of care.
Quality Improvement ** **	The combined and unceasing efforts of everyone - healthcare professionals, patients and their families, researchers, payers, planners and educators - to make the changes that will lead to better patient outcomes (health) better system performance (care) and better professional development.
Regular consultations' * **	The term '*regular consultations*' will normally mean at minimum several times per month, but frequency will vary during the course of the programme according to the requirements of the individual PhD candidate. The consultations ought to discuss progress of the PhD project and PhD programme, provide general scientific advice, help on project management, help to identify and initiate follow-up projects, thesis writing, and assistance during publication
Relevant stakeholders* **	*Relevant stakeholders* would include graduate institution heads, graduate institution administrations, research directors, supervisors, PhD candidates, faculties, universities, governments and appropriate international organisations
Resources* **	The *resources* (internal or external) include: infrastructure for

	the project, the running costs, costs of courses, costs for participation in relevant international scientific meetings, and enrolment fees where applicable; laboratory, informatics and office facilities for the PhD candidate; stipend/salary for the PhD candidate (although the manner in which candidates are remunerated will vary)
Self-Assessment****	The process of evaluating one's own deficiencies, achievements, behaviour or professional performance and competencies. Self-assessment is an important part of self-directed and lifelong learning because it creates a need for improvement while it justifies confidence in ones competence.
Skill****	The ability to perform a task well, usually gained by training or experience; a systematic and coordinated pattern of mental and/or physical activity.
Standards (Guidelines) for accreditation*	*Standards (Guidelines) for accreditation* external evaluation of the quality assurance of educational programmes that offered by the higher education institution
The statement on process of selection of students**	*The statement on process of selection of students* would include both rationale and methods of selection such as secondary school results, other relevant academic or educational experiences, entrance examinations and interviews, including evaluation of motivation to become doctors. Selection would also take into account the need for variations related to diversity of medical practice
A safe learning environment**	*A safe learning environment* would include provision of necessary information and protection from harmful substances, specimens and organisms, laboratory safety regulations and safety equipment
Student representation**	*Student representation* would include student self governance and representation on the curriculum committee, other educational committees, scientific and other relevant bodies as well as social activities and local health care projects
Suitability of the research**	Measurements of the *suitability of the research environment* could be made using e.g. publication record (number of publications, impact factor, etc.), level of external funding, and numbers of qualified researchers in the group, record of department and graduate institute
Team-based learning (TBL)****	Team-based learning is a learner-centred, instructor-directed strategy that incorporates class-based teamwork and assessment to enhance active learning and critical thinking. Originally developed by Larry Michaelsen in a business school environment to promote the benefits of small-group teaching in a large group setting, it has since been increasingly used within medical education. It can be used with large or small classes,

	and involves dividing a class into multiple small groups of between 5-7 students in a single classroom. One content-expert can instruct 20 or more teams, and grading, peer evaluation and feedback are used to promote individual and team accountability and learning. It is recommended that teams are created by the instructor with members selected on the basis of diversity of skills and other characteristics, and that members should work together in the same teams for as long as possible. The approach is characterised by three key components: 1. Individual student preparation in advance of the class. Students receive a list of learning activities and a set of learning goals to be completed before the class. 2. Individual (iRATs) and Team readiness assurance tests (tRATs). A set of 10-20 multiple choice questions (MCQs) focussing on the concepts the students need to master in order to complete the next stage. This is completed individually, and then again as a team through consensus-building discussion, and is followed by a clarification review by the instructor. 3. In class team application (tAPP) assignments. Students are presented with a significant problem, authentic to the type they will encounter in the workplace, which they must interpret and as a team select a specific response from a range of answers that they should also be able to explain and defend. All teams have the same problem and must make a simultaneous report of their answer. A backward design, outcomes-based approach is recommended to ensure the focus remains on what learners should be able to do. As such, instructors should establish the situational factors and learning goals before the team application, readiness assurance tests and advance assignments. Students are graded on all stages of the work. Teams can appeal a question in the readiness assurance tests and team application if they think it is poorly written or have an alternative answer by providing an alternative question and a written, referenced argument to support their case.
Transferable skills* **	Courses in *transferable skills* could include training of PhD candidates in presentation of their research (oral/poster/papers) to academic and non-academic audiences, in university teaching, in linguistic skills, in project management, in grant application, in critical evaluation of scientific literature, in supervision of technicians and research candidates, and in career development and networking. *Courses in transferable skills* are important both for those who may be expected to continue in research, in either public or

	private institutions, and for those who continue towards careers in other fields
Transparency ***	The wish for *transparency* in the admission process notwithstanding, for many institutions a PhD programme is seen as the continuation of a master's or medical programme. The admission of the institution's own candidates ought not to prevent the admission of candidates from other institutions

*The Law of the Republic of Kazakhstan «On Education» July 27, 2007, #319-III (with Amendments from April 9, 2016);
**The World Federation for Medical Education Global Standards for Quality Improvement in Basic Medical Education (Revision 2015);
***The ORPHEUS – AMSE – WFME Standards for PhD Education in Biomedicine and Health Sciences in Europe (Best Practices for PhD Training, Revision 2016);
****Glossary of Medical Education Terms. AMEE (Association of Medical Education in Europe, https://amee.org/)