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Standards for Health and Life Sciences Programmes - First Draft

*Programme Evaluation for Transparency and Recognition of Skills and
Qualifications*

TLQAA+

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Table of Contents

Introduction:	3
An overview of selected Medical, Health and Life Sciences Programmes Evaluation	3
The Situation in Europe	3
Dentistry	3
Pharmacy.....	7
Health and Social Sciences Programs:	8
The Situation in the USA and Canada	9
Dentistry and Pharmacy Programmes.....	9
Medicine Programmes	10
Health Sciences Programmes.....	12
Nursing Programmes	20
Lessons learned	24
Standards for Health and Life Sciences Programmes	24
Sectoral Qualifications Framework.....	29
Nursing domain	29
General Medical Domain	31
Conclusions	32
Bibliography	32

List of Tables

<i>Table 1. WFME Trilogy of Standards (reproduced from (Rezaeian, Jalili, Nakhaee, Jahroomi Shirazi, & Jafari, 2013) and adapted to reflect the latest standards from WFME (WFME, 2015) (WFME, 2015p) (WFME, 2015c)).</i>	11
<i>Table 2. CAPTE set of standards for physical therapist education programmes (reproduced from (CAPTE, 2017))</i>	20
<i>Table 3. Global standards for the initial education of professional nurses and midwives (reproduced from (WHO, 2009)).</i>	21
<i>Table 4. CASN Accreditation Values (Reproduced from (CASN, 2014))</i>	21
<i>Table 5. CASN accreditation standards for nursing programmes (reproduced from (CASN, 2014)).</i>	23
<i>Table 6. Suggested sectoral qualifications framework for the nursing levels 6 and 7 of the LQF.</i>	30
<i>Table 7. Suggested sectoral qualifications framework for the general medical education level 8 of the LQF.</i>	32

Introduction:

The objective of work package 7 of the Erasmus+ project “**Program Evaluation for Transparency and Recognition of Skills and Qualifications**” is to define a set of standards and procedures for the evaluation of the Health and Life Sciences Programmes in the Lebanese Higher Education. Medical education is at the centre of this domain. The present document is a working document that proposes a set of standards for the Medical Programmes in **General**, based on the investigation of the European, American and Canadian standards for recognition or accreditation of Medical Programmes. Stakeholders’ recommendations on the Nursing programme, as an example for the other medical programmes, will also be considered.

The activities in the current work package that led to the present draft, and were conducted into two main directions:

1. The review of the existing standards by the different European and other accrediting medical bodies.
2. The review of the local community needs and considering the demands and requirements of the Ministry of Higher Education in this regard.

The present document presents in the next section a summary of the bibliographical study. Then the adaptation of the core standards to the domain of health and life sciences is suggested. The following section is dedicated to the definition of descriptors of level 6 and 7 of the LQF for the nursing education.

An overview of selected Medical, Health and Life Sciences Programmes Evaluation

This section reflects the current standards and procedures applied for the evaluation of different Medical Programmes, particularly in Europe but also in USA and Canada. Following is a summary of the existing standards in the Medical Programs with reference to those in Europe, USA and Canada.

The Situation in Europe

Dentistry

ADEE¹ LEADER Programme has set the Standards for Dentistry Education. These standards should be considered by the Schools of Dentistry for recognition. This should include quality assurance activities and the illustrative structure as indicated here onward. The ADEE LEADER excellence programme has been developed through an updating of the earlier Task Force documents. Subsequently the requirements have been carefully reconsidered and subjected to minor amendments by the Association.

¹ ADEE: Association for Dental Education in Europe (<http://www.adee.org/>)

ADEE Standards involve quality assurance activities to empower their importance for the evolving domains of dentistry in the upcoming period. This concept aligns with the approach suggested by (Rohlin, et al., 2002) and others. This was supported by the General Assembly of the ADEE in Riga in 2014.

The ADEE LEADER Excellence Programme identifies five requirements focus areas that dental schools must address to ensure the quality of education through operation and activities to meet the recognition criteria and is up to the level of quality expected from ADEE members.

The five requirement areas are:

1. Vision, Mission, Goals and Objectives;
2. Quality Management Structures and Processes;
3. Educational Stakeholder Engagement;
4. Managing the Human Resource;
5. Managing the Curriculum.

Each requirement area is outlined and the following information are provided²:

Rationale: Details the rational why the requirement area has been selected as an area of focus

Criteria: Generic criteria that should be applied to ensure the rationale is achieved and embedded within school activities.

Area 1: Vision, Mission, Goals and Objectives	
Rational	Quality management can only be implemented when the explicit goals and objectives of all of the functions of a dental school are clearly defined. This can be facilitated by identifying:
Criteria	1.1. The School’s position and inter-relationship within the broader university mission, which should be clear, documented and transparent. 1.2. Accountability, responsibility and communication relationships between the School, Faculty and University (where relevant) which should be transparent and reviewed regularly for effectiveness. 1.3. School and hospital strategies that should make explicit mention of quality assurance activities and how such activities are enabled. 1.4. School and hospital goals and objectives that should be outcome based, clearly focused on the delivery of high quality dental education. 1.5. Each division and sub-division that should have a supporting operational plan that will enable the delivery of the mission and quality strategy of the school.

² The following tables have been reproduced from (ADEE, 2014)

Area 2: Quality Management Structures and Processes	
Rational	Quality Management is enabled by efficient and effective quality structures and processes. Such processes and structures should be embedded within school support structures to be effective. This achieved by ensuring:
Criteria	<p>2.1. Every dental school (and hospital) should pursue explicit quality management, improvement and enhancement. This should be defined in a quality improvement strategy.</p> <p>2.2. Quality management includes teaching, research, clinical care, professionalism/ 'fitness to practice', the physical facilities and infrastructure. Quality should be enabled within each element.</p> <p>2.3. Quality is the responsibility of everybody, including all those involved in dental education, including the dental support staff and students.</p> <p>2.4. Patients must have some means of input into the QA process. Patient engagement is encouraged in the quality improvement process.</p> <p>2.5. Appropriate Quality Systems should be an integral part of all of the activities in a dental school and hospital. It should be a team based approach.</p> <p>2.6. Schools should have critical self-evaluation systems in place with an appropriate and consistent method of analysis.</p> <p>2.7. Assessment of quality should be systematic, periodic and cyclical in nature. It is suggested that, as an ideal, an annual appraisal of teaching programmes is undertaken along with a periodic (for example 5-year) review.</p> <p>2.8. Continual quality management processes and their outcomes should be documented properly.</p>

Area 3: Educational Stakeholder Engagement	
Rational	Engagement with and acting on student and other stakeholders within the education setting enables quality improvement at a practical level. Such engagement is facilitated by encouraging:
Criteria	<p>3.1. Student feedback, obtained through appropriate evaluation mechanisms and teacher/ student liaison meetings (or forums), are an essential component of quality improvement. This may include Student participation and representation in decision making bodies.</p> <p>3.2. Academic Staff feedback should be proactively sought and incorporated into the quality improvement plan and strategy.</p> <p>3.3. Feedback from recent graduates on how the dental programme has facilitated their ability to work as dental care providers should be included amongst the tools available for QA. The views of employers or postgraduate trainers about the graduates (from the school) are an important source of feedback.</p> <p>3.4. Feedback from patients and the support staff team (nurses, receptionists etc.) is an important tool and can be used in the assessment of the quality of care provided by both students and staff.</p> <p>3.5. Any quality improvement method employed should ensure that outcomes from the feedback and review mechanisms are communicated to teachers, students, graduate and postgraduate trainers. This fosters an ethos of transparency, continued professional development and life-long learning.</p>

Area 4: Managing the Human Resource	
Rational	Quality management within the School acknowledges the role of the human resource in enabling quality improvement and change. Ensuring staff are recruited, selected and retained who embrace a continuous quality improvement ethos, will aid successful delivery of quality education services. In particular:
Criteria	<p>4.1. All those involved in, and associated with, learning and teaching should receive a regular, formal appraisal based on documentation that may include a personal portfolio. This will identify training and development needs, whilst identifying good practice for dissemination.</p> <p>4.2. There should be a strategy and associated budget for the development of all staff involved in learning and teaching.</p> <p>4.3. There should be a properly documented period of 'educationally related' training for all new (and returning) teaching staff with clear guidelines and achievable targets. This should form part of the overall strategy for the training and development of staff.</p> <p>4.4. The management and committee structure within the Dental School, Hospital and the providers of other 'clinical support' training facilities should include systems for quality assurance and improvement at every level.</p>

Area 5: Managing the Curriculum	
Rational	A well-described curriculum grounded in best practice principles and approaches is the bedrock of a quality educational experience for staff and students. As a minimum requirement the following should be embedded within curriculum development:
Criteria	<p>5.1. The Dent. Ed III / ADEE 'Profile & Competencies for the New European Dentist provides the basis for student expectations on the competencies and skills they will achieve through study within the Schools programmes.</p> <p>5.2. The Dent. Ed. III / ADEE 'Curriculum Structure & European Credit Transfer System for European Dental Schools provides the basis for the curriculum structure that enables student mobility throughout European nations.</p> <p>5.3. Other best practice documents are used to ensure the curriculum is kept current and responsive to international best practice.</p>

To fully achieve the standards there will be a need for appropriate local, national and European support. ADEE criteria are intended to support those taking the initial steps towards achievement of modern dentistry education, by providing a 'toolkit' and a network of expertise, to support the progress of European schools towards achieving these requirements.

Concluding Remarks

With respect to the literature concerned with the guidelines and standards for dental education in Europe, the following elements could be the key standards that are considered during the evaluation process:

- The importance of the availability of nearly unified curricula for all programs to facilitate the transfer of credits.
- The significance of ensuring the quality of dental care in practice sites.
- The importance of disseminating quality culture at all levels at the school and at practice sites.

Pharmacy

A survey of quality assurance (QA) systems in European faculties of pharmacy was carried out under the patronage of the European Association of Faculties of Pharmacy PHARMINE³ consortium. A questionnaire based study on the quality criteria of the International Pharmaceutical Federation⁴ and the Accreditation Council for Pharmacy Education⁵ (USA) was sent out to European faculties. Twenty eight countries participated. More than 50% had an operating QA system. QA scores were high with regard to complete curriculum and training, use of European Credit Transfer System, students' representation and promotion of professional behavior. QA scores were low in evaluation of achievement of mission and goals, and financial resources.

The QA areas surveyed were:

- The existence of QA for education and research in the country and its model;
- Mission, planning and evaluation
- Organization and administration
- Curriculum
- Students
- Faculty Staff
- Facilities and Resources

Guimarães Morais, J. A., Cavaco, A. M., Rombaut, B., Rouse, M. J., & Atkinson, J. (2011). Quality assurance in European pharmacy education and training. *Pharmacy Practice*, 9(4), 195–199.

The questionnaire and the survey results are reported in (PHARMINE, 2011). The results have been analysed in (Guimaraes Morais, Cavaco, Rombaut, Rouse, & Atkinson, 2011): *A QA system exists in most European countries. The absence of a mission statement with evaluation shows a lack of QA culture in some HEIs. Although all HEIs are aware of a QA policy as a*

³ PHARMINE is a project that has been supported with support for the European Commission, Lifelong Learning Programme of the European Union. <https://www.pharmine.org/>

⁴ FIP: International Pharmaceutical Education. <https://www.fip.org/>

⁵ ACPE: Accreditation Council for Pharmacy Education. <https://www.acpe-accredit.org/>

means to assure better educational and research outcomes still its application needs to be followed according to the study performed in 2011. There are areas in which all HEIs believed they were performing according to QA requirements: complete curriculum and training, transfer of ECTS, students' representation and promotion of professional behaviour. These are the pillars of any HEI that graduates health professionals. However, HEIs in pharmacy education seem to suffer from several constraints. There are financial pressures, and these may lead to limitations in autonomy within the global university structure, non-adapted facilities, as well as to restrictions on staff with a consequent reduction in continuing professional development and other activities.

Concluding Remarks

The quality criteria were based on many areas for evaluation, the involvement of training is highly considered. The presence of questions in the survey related directly to the training activities, sites and periods reflected the importance of implementing the skills and competencies in this regard in the curriculum of pharmacy programs. Furthermore, considering credit transfer is highlighted aiming at facilitating students' mobility among European Countries. It is of interest to mention that, this research article and the data obtained contributed effectively as a platform for implementation of the academic standards of Pharmacy programmes.

Health and Social Sciences Programs:

The Accreditation Agency in Health and Social Sciences⁶ (AHPGS) standards which are adopted by the German Accreditation Agency in Health and Social Sciences Programmes are taken here as an example for quality management of different medical and health programmes. The Accreditation Agency in Health and Social Sciences (AHPGS) was founded in 2001 by the Rector's Conference in Nursing Sciences, the Assemblies of the Faculties of Social Work and of Therapeutic Pedagogy and the German Coordinating Agency for Public Health (DKGW), for the purpose of enhancing quality standards in teaching and learning in higher education. By implementing accreditation and evaluation procedures, AHPGS aims to achieve increased transparency and equity among higher education institutions and their study programmes, at both national and international levels. The Agency specializes in the accreditation of study programmes and Higher Education Institutions (HEIs) in numerous educational fields, with a particular focus on health and social sciences. Its work focuses on guaranteeing uniform, internationally-competitive standards for a wide range of degrees by supporting quality assurance and development. AHPGS is a know accreditation agency at the international level⁷.

Summary of AHPGS Standards:

1. Structural data of the study program
 - a. Modularization of the study program and exam system
 - b. Objectives of the study program and their rationale

⁶ <https://ahpgs.de/en/welcome-to-the-ahpgs/>

⁷ Three programmes of Health Sciences in Beirut Arab University have been accredited by AHPGS.

- c. Labor market situation and career opportunities
 - d. Admission requirements and rules of recognition.
 - e. Quality Assurance
2. Human resources, equipment and furnishings
 3. Institutional Environment and structural conditions

Concluding Remarks

The available literature revealed that there were many efforts done in Europe with respect to medical programs. Research articles and published materials on the web pages assisted the establishing of academic standards for the medical programs. The examples are huge and the displayed examples are described as models to show a brief history about the processing either through formulation of standards or performing research and joint projects toward better developing of the already settled standards. It is of interest to mention that all the initiatives are considered during the developing of the professional standards of medical programs in Europe and globally. The involvement of ECTS requirements in almost all European Standards revealed the significance of credit transfer as a platform for mobility and professional framework. Consideration of training as a complimentary component for didactic courses is highlighted within the standards cited in literature by the medical accreditation bodies in Europe.

The Situation in the USA and Canada

Dentistry and Pharmacy Programmes

There are many accreditation organizations available with regard to dentistry and pharmacy programmes. These include:

1. Commission on Dental Accreditation⁸
2. American Accreditation Council of Pharmacy Education⁹
3. Canadian Council for Accreditation of Pharmacy Programs¹⁰

Investigation of the standards displayed in each programme (Details are available on the web site of each organization) revealed that there is a great similarity between the quality criteria required for each of them. There were special emphasis on the curriculum (academic and clinical), training hours and criteria for training sites. It was noticed that the standards for accreditation of dentistry and pharmacy programmes in Europe are in quite agreement with those reported in USA and Canada for each programme respectively. Some minor differences

⁸ <https://www.ada.org/en/coda>

⁹ <https://www.acpe-accredit.org/>

¹⁰ <http://ccapp-accredit.ca/>

exist, depending on the accreditation agencies in different countries based mainly on community needs, the stakeholder recommendations and national official authorities responsible for formal certification of the programs.

Medicine Programmes

The standards developed by the World Federation for Medical Education¹¹ (WFME) are taken as an illustrative example in this section. The project of defining and implementing Global Standards for medical education started in 2000 and the project was approved by the World Health Organisation (WHO) and the World Medical Association (WMA). Medical educators from six continents have participated in developing the global standards. These standards are being adopted in different parts of the world including the Eastern Mediterranean, Southeast Asia, Western Pacific region and Latin America. Some countries have defined their national standards based on the WFME global ones, e.g. Egypt, Sudan and China.

WHO/WFME Guidelines for Accreditation of Basic Medical Education were available in the year 2005. Quality assurance and accreditation system for higher education based on external review are now used in somewhat more than seventy countries (Karle, Global Standards And Accreditation in Medical Education: A View from the WFME, 2006). Based on the accumulated information collected at the WFME office, more than five hundred medical schools in the world have now used the WFME standards as basis for institutional self-evaluation studies, peer reviews and other types of programme development, and about one hundred countries are using the standards either directly or as a template for national standards in accreditation or other types of recognition of programmes. Comprehensive sub regional and national reform programmes are being developed, for example in central Asia countries, Iran (Karle, Global Standards And Accreditation in Medical Education: A View from the WFME, 2006).

Similarly, a great number of countries are using the WFME standards for postgraduate medical education and CPD. The vision of the WFME is that in the future, such a database could be an important instrument in quality development and international recognition of higher education institutions, allowing a kind of meta-accreditation (Karle, Global Standards And Accreditation in Medical Education: A View from the WFME, 2006) (Karle, 2010) (de V van Niekerk, Christensen, Karle, Lindgren, & Nystrup, 2003).

The WFME Global Standards

WFME standards are not defined to assess only graduates' competencies, but to organize programmes and educational centres at schools of medicine and other educational institutes. Assessing an institution and its programme against the standards means ensuring: educational needs, social needs, professional needs, regulatory needs (Karle, 2010) (WFME, 1998).

The WFME Global standards cover all three phases of Medical Education: Basic Medical Education; Postgraduate Medical Education and Continuing Professional Development (CPD).

¹¹ <http://wfme.org/>

The standards in all the three phases are structured in nine areas, defined as broad components of structure and process, and each area again divided in 36–38 sub-areas corresponding to performance indicators. For the standards in Basic medical education, the areas are: mission and Outcomes; educational programme; assessment of students; Students; academics staff/faculty; educational recourses; programme evaluation; governance and administration; and the continues renewal (Rezaeian, Jalili, Nakhaee, Jahroomi Shirazi, & Jafari, 2013) (WFME, 2015).

Basic Medical Education	Postgraduate Medical Education	Continuing Professional Development(CPD)
1. Mission and Outcomes	1. Mission and Outcomes	1. Mission and Outcomes
2. Educational Programme	2. Educational Programme	2. Educational Programme
3. Assessment of Students	3. Assessment of Trainees	3. Assessment and Documentation
4. Students	4. Trainees	4. The Individual Doctor
5. Academic Staff/Faculty	5. Trainers	5. CPD- Provision
6. Educational Resources	6. Educational Resources	6. Educational Resources
7. Programme Evaluation	7. Programme Evaluation	7. Evaluation of CPD activities
8. Governance and Administration	8. Governance and administration	8. Organisation
9. Continuous Renewal	9. Continuous Renewal	9. Continuous Renewal

Table 1. WFME Trilogy of Standards (reproduced from (Rezaeian, Jalili, Nakhaee, Jahroomi Shirazi, & Jafari, 2013) and adapted to reflect the latest standards from WFME (WFME, 2015) (WFME, 2015p) (WFME, 2015c)).

Sub-areas are defined as specific aspects of an area, corresponding to performance indicators. For each sub-area, a number of standards are defined at two levels of attainment: (a) Basic standards, meaning that the standards must be met from the outset of programme, and being especially relevant for accreditation purposes. Basic standards are expressed by a “must”; and (b) Standards for quality development, meaning that the standard is in accordance with international consensus about best practice, and that fulfillment of-or initiatives to fulfill- some or all of such standards should be documented, and being especially relevant for programme reforms. Standards for quality development are expressed by a “should” (Karle, 2006) (Karle, 2010) (WFME, 2015) (WFME, 2015p) (WFME, 2015c). It is worth noting that in 2016, WFME has defined a set of global standards for Master’s Degrees in Medical and Health Professions Education (WFME, 2016).

It is the opinion of WFME that the set of international standards presented can be used globally as a tool for quality assurance and development of basic medical education. This could be done in different ways, such as: Institutional Self-evaluation, Peer Review, Combination of Institutional Self-evaluation and External Peer Review, and Recognition and Accreditation.

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

Concluding Remarks

Based on the accumulated information collected at the WFME office, more than 500 medical schools in the world have now used the WFME standards as basis for institutional self-evaluation studies, peer reviews and other types of programme development, and about 100 countries are using the standards either directly or as a template for national standards in accreditation or other types of recognition of programmes.

The following points deserve emphasis as reported in literature:

- The social accountability of medical educational must be in all accreditation process at all levels.
- The new WHO/WFME strategic partnership, to improve medical education, will have a central role in the reform processes and in promotion of efficient and transparent national accreditation system worldwide.
- Standards should be concerned with broad categories of the content, process, educational environment and outcome of medical education.
- Compliance with standards must be a matter for each community, specific issues relevant to institutional and regional policy (The medical sciences schools should follow the motto “ think globally and act locally”).
- The WFME Standards will encourage medical sciences schools to develop an integrated program in the theory and practice – of the bio- medical, clinical, behavioural and social sciences, including medical ethics, medical psychology, medical sociology and public health.

Referring to medicine programmes accreditation bodies, revealed that WFME is the only organisation that can accredit different international programmes based on its standards that focus mainly on quality education that reflects good practice. The standards of WFME can be applicable globally regardless of country specifications. Therefore many international programmes adopt its standards preparing themselves for being recognized by WFME.

Health Sciences Programmes

Two kind of programmes are considered in the health sciences domain; physiotherapy and nursing. For the Physiotherapy programmes two evaluation set of standards are overviewed; the one by the World Federation for Physical Therapy¹² (WCPT) and, the one by the Commission on Accreditation in Physical Therapy Education¹³ (CAPTE).

Standards by the World Federation for Physical Therapy

WCPT has defined a set of educational standards and some accreditation/recognition processes. It aims at improving the quality of university education in the domain of physical therapy and offers evaluation and accreditation at the international level. Guidelines for educational and accreditation purposes have been defined for different levels. In the present

¹² <https://www.wcpt.org/>

¹³ <http://www.capteonline.org/home.aspx>

document the criteria for accreditation/recognition of physical therapist professional entry level education programmes are reported as defined in (WCPT, 2011).

WCPT recognizes that the education in this field depends largely on the profession and the practice environment from one side and the nature of physical therapist education on the other side. Therefore, it requires that the self study conducted yields to a description of both contexts in which the programme under scrutiny evolves.

WCPT also recognizes two major components for a physical therapist education programme:

- The university based components
- The clinical education components

Besides the previous contextual aspects, WCPT standards incorporate specific criteria for:

- The academic environment
 - Be intellectual challenging and foster the acquisition of academic skills and a spirit of scholarship and inquiry
 - Support students in both their personal and academic development
 - Involve those who demonstrate a commitment to meeting the expectations of the higher/tertiary education, the students and the profession
 - Help students become aware of multiple styles of thinking, diverse social concepts, values and ethical behaviours
 - Manifest compatible and mutually supporting missions and values from the HEI and the physical therapy programme
- Curriculum plan, evaluation, content and outcomes
 - Curriculum plan and content
 - Information about the contemporary practice of physical therapy
 - Standards of practice
 - Current and contemporary literature
 - Curricular evaluation
 - Evidence of ongoing and formal evaluation of the physical therapy curriculum
 - A written curriculum evaluation plan
 - Collect data from stakeholders
 - determine strengths and weaknesses of the curriculum
 - determine if the practice expectations and specific mission, goals and expected student outcomes of the curriculum are being met
- Institution and programme resources
 - Institution
 - Programme
 - Defined policies and procedures in rights, responsibilities, safety, privacy, student recruitment and admission, student retention and progression, and protection of clinical education sites
 - Human resources

- demonstrate the mix of academic qualifications, research competencies, clinical and professional expertise and specialization
- Responsibility of faculty members in the development of the admissions criteria, curriculum content, nature and content of clinical education, grading and evaluation processes, and expectations of acceptable professional and ethical behaviors by students
- Adequate numbers of physical therapy faculty to achieve the programme outcomes
- Core academic faculty
- Programme head/administrator
 - Ensuring the regular evaluation of all physical therapy academic faculty
 - Planning and administering the programme's financial resources
 - Ensuring the evaluation of non full-time faculty members
 - Ensuring the equitable application of rights and privileges to all individuals involved in the delivery of the physical therapy programme
- Clinical education director/coordinator
 - Conduct, develop, co-ordinate, manage and evaluate on an ongoing basis the clinical education programme that is normally delivered by physical therapists in the clinical environment
 - Communicate all appropriate information about the clinical education programme to all faculty, students and clinical sites in a timely manner
 - Ensure, when required, that there are written agreements between the higher education institution and the clinical placement
 - Demonstrate evidence of responsibility for ensuring that relevant regulations, policies and procedures relating to clinical education are upheld
 - Coordinate the assessment of the student learning experiences in the clinical environment
- Clinical education site instructors
- Associate faculty
- Other resources
 - Student services
 - Support staff
 - Financial support
 - Library
 - Facilities
 - Equipment, technology and material

Standards by the Commission on Accreditation in Physical Therapy Education

CAPTE serves the public by establishing and applying standards that ensure quality and continuous improvement in the professional preparation of physical therapists and physical therapist assistants. The applied standards reflect the evolving nature of education, research and practice. CAPTE accredits physical therapist professional education programmes offered at the master's and clinical doctoral degree levels by higher education institutions in the United States and internationally. It also accredits paraprofessional physical therapist assistant

technical education programs offered at the associate degree level by higher education institutions in the United States only.

In (CAPTE, 2014), a definition of academic quality is provided as:

“A quality educational program is one that prepares graduates for competent and ethical practice, career flexibility, and instills the value associated with the profession. Quality also mandates an educational experience that prepares individuals for lifelong learning, which is essential to future practice.”

CAPTE defines two sets of standards; one for physical therapist education programmes (CAPTE, 2017) and the other for physical therapist assistant education programmes (CAPTE, 2017b). In the following we reproduce the standards for physical therapist education programmes for illustration purposes:

Standard 1	The programme meets graduate achievement measures and programme outcomes related to its mission and goals
Required Elements	<ol style="list-style-type: none"> 1. The mission of the programme is written and compatible with the mission of the institution, with the unit(s) in which the programme resides, and with contemporary preparation of physical therapists. 2. The programme has documented goals that are based on its mission, that reflect contemporary physical therapy education, research and practice, and that lead to expected programme outcomes. 3. The programme meets required student achievement measures and its mission and goals as demonstrated by actual programme outcomes.
Standard 2	The programme is engaged in effective, on-going, formal, comprehensive processes for self-assessment and planning for the purpose of programme improvement
Required Elements	<ol style="list-style-type: none"> 1. The programme has documented and implemented on-going, formal, and comprehensive assessment processes that are designed to determine program effectiveness and used to foster programme improvement. 2. The programme provides an analysis of relevant data and identifies needed programme change(s) with timelines for implementation and reassessment. 3. The curriculum assessment plan is written and addresses the curriculum as a whole. The assessment plan includes assessment of individual courses and clinical education. The plan incorporates consideration of the changing roles and responsibilities of the physical therapy practitioner and the dynamic nature of the profession and the health care delivery system. Assessment data are collected from appropriate stakeholders including, at a minimum, programme faculty, current students, graduates of the program, and at least one other stakeholder group such as employers of graduates, consumers of physical therapy services, peers, or other health care professionals. The assessment addresses clinical education sites including, at a minimum, the number and variety and the appropriate length and placement within the curriculum. 4. The programme has implemented a strategic plan that guides its future development. The plan takes into account programme assessment results, changes in higher education, the health care environment and the nature of contemporary physical therapy practice.

Standard 3	The institution and programme operate with integrity
Required Elements	<ol style="list-style-type: none"> 1. The sponsoring institution(s) is (are) authorized under applicable state law or other acceptable authority to provide postsecondary education and has degree granting authority. In addition, the institution has been approved by appropriate state authorities to provide the physical therapy education programme. 2. The sponsoring institution(s) is (are) accredited by a regional accrediting agency recognized by the US Department of Education (USDE) or by the Council for Higher Education Accreditation (CHEA). 3. Institutional policies related to academic standards and to faculty roles and workload are applied to the program in a manner that recognizes and supports the academic and professional aspects of the physical therapy program, including providing for reduction in teaching load for administrative functions. 4. Policies and procedures exist to facilitate equal opportunity and nondiscrimination for faculty, staff and prospective/enrolled students. 5. Policies, procedures, and practices that affect the rights, responsibilities, safety, privacy, and dignity of programme faculty and staff are written, disseminated, and applied consistently and equitably. 6. Policies, procedures, and practices exist for handling complaints that fall outside the realm of due process, including a prohibition of retaliation following complaint submission. The policies are written, disseminated, and applied consistently and equitably. Records of complaints about the program, including the nature of the complaint and the disposition of the complaint, are maintained by the programme. 7. Programme specific policies and procedures are compatible with institutional policies and with applicable law. 8. Programme policies, procedures, and practices provide for compliance with accreditation policies and procedures.
Standard 4	The programme faculty are qualified for their roles and effective in carrying out their responsibilities
Required Elements	<ol style="list-style-type: none"> 1. Each core faculty member, including the program director and clinical education coordinator, has doctoral preparation, contemporary expertise in assigned teaching areas, and demonstrated effectiveness in teaching and student evaluation. In addition, core faculty who are PTs and who are teaching clinical PT content are licensed or regulated in any United States jurisdiction as a PT. 2. Each core faculty member has a well-defined, ongoing scholarly agenda that reflects contributions to: (1) the development or creation of new knowledge, OR (2) the critical analysis and review of knowledge within disciplines or the creative synthesis of insights contained in different disciplines or fields of study, OR (3) the application of findings generated through the scholarship of integration or discovery to solve real problems in the professions, industry, government, and the community, OR (4) the development of critically reflective knowledge about teaching and learning, OR (5) the identification and resolution of pressing social, civic, and ethical problems through the scholarship of engagement. 3. Each core faculty member has a record of institutional or professional service. 4. Each associated faculty member has contemporary expertise in assigned teaching areas and demonstrated effectiveness in teaching and student evaluation. 5. Formal evaluation of each core faculty member occurs in a manner and timeline consistent with applicable institutional policy. The evaluation includes assessments of teaching, scholarly activity and service, and any additional responsibilities. The evaluation results in an organized faculty development plan that is linked to the assessment of the individual core faculty member and to program improvement.

	<ol style="list-style-type: none"> 6. Regular evaluation of associated faculty occurs and results in a plan to address identified needs. 7. The programme director demonstrates the academic and professional qualifications and relevant experience in higher education requisite for providing effective leadership for the programme, the programme faculty, and the students. 8. The program director provides effective leadership for the programme including, but not limited to, responsibility for communication, programme assessment and planning, fiscal management, and faculty evaluation. 9. The clinical education coordinator is a physical therapist who is licensed or regulated in any United States jurisdiction as a PT and has a minimum of three years of full-time post-licensure clinical practice. Two years of clinical practice must include experience as a CCCE or CI in physical therapy, or minimum of two years of experience in teaching, curriculum development and administration in a physical therapy education programme. 10. The clinical education coordinator is effective in developing, conducting, and coordinating the clinical education programme. 11. The collective core and associated faculty include an effective blend of individuals with doctoral preparation (including at least 50% of core faculty with academic doctoral degrees) and individuals with clinical specialization sufficient to meet program goals and expected programme outcomes as related to programme mission, institutional expectations and assigned programme responsibilities. 12. The collective core faculty initiate, adopt, evaluate, and uphold academic regulations specific to the programme and compatible with institutional policies, procedures and practices. The regulations address, but are not limited to, admission requirements; the clinical education program; grading policy; minimum performance levels, including those relating to professional and ethical behaviors; and student progression through the programme. 13. The collective core faculty have primary responsibility for development, review and revision of the curriculum with input from other appropriate communities of interest. 14. The collective core faculty are responsible for assuring that students are safe and ready to progress to clinical education. 15. Clinical instructors are licensed physical therapists, with a minimum of one year of full time (or equivalent) post-licensure clinical experience, and are effective role models and clinical teachers.
<p>Standard 5</p>	<p>The programme recruits, admits and graduates students consistent with the missions and goals of the institution and the program and consistent with societal needs for physical therapy services for a diverse population</p>
<p>Required Elements</p>	<ol style="list-style-type: none"> 1. Programme policies, procedures, and practices related to student recruitment and admission are based on appropriate and equitable criteria and applicable law, are written and made available to prospective students, and are applied consistently and equitably. Recruitment practices are designed to enhance diversity of the student body. 2. Prospective and enrolled students are provided with relevant information about the institution and program that may affect them including, but not limited to, catalogs, handbooks, academic calendars, grading policies, total cost to student, financial aid, the programme’s accreditation status, the process to register a complaint with CAPTE, outcome information, and other pertinent print and/or electronic information. Materials related to the institution and programme are accurate, comprehensive, current, and provided to students in a timely manner. 3. Enrollment agreements, if used, comply with institutional accrediting agency and state requirements and are only executed with a prospective student after disclosure

	<p>of the information delineated in 5.2 and formal admission to the programme has occurred.</p> <ol style="list-style-type: none"> 4. Policies, procedures, and practices that affect the rights, responsibilities, safety, privacy, and dignity of programme students are written and provided to students and applied consistently and equitably. 5. Policies, procedures, and practices related to student retention, student progression and dismissal through the programme are based on appropriate and equitable criteria and applicable law, are written and provided to students, and are applied consistently and equitably. Retention practices support a diverse student body.
Standard 6	The programme has a comprehensive curriculum plan
Required Elements	<ol style="list-style-type: none"> 1. The comprehensive curriculum plan is based on: (1) information about the contemporary practice of physical therapy; (2) standards of practice; and (3) current literature, documents, publications, and other resources related to the profession, to the delivery of health care services, to physical therapy education, and to educational theory. 2. The curriculum plan includes an expectation that students enter the professional programme with a baccalaureate degree. Alternatively, students may have three years of undergraduate education that includes in-depth upper division study in one discipline comparable to a minor at the institution prior to entering the professional programme. 3. The specific prerequisite course work is determined by the programme’s curriculum plan. 4. The curriculum plan includes a description of the curriculum model and the educational principles on which it is built. 5. The curriculum plan includes a series of organized, sequential and integrated courses designed to facilitate achievement of the expected student outcomes, including the expected student learning outcomes described in Standard 7. The curriculum includes organized sequences of learning experiences that prepare students to provide physical therapy care to individuals with diseases/disorders involving the major systems, individuals with multiple system disorders, and individuals across the lifespan and continuum of care, including individuals with chronic illness. The clinical education component provides organized and sequential experiences coordinated with the didactic component of the curriculum. Clinical education includes both integrated³⁷ and full-time³⁸ terminal experiences. 6. The didactic and clinical curriculum includes interprofessional education; learning activities are directed toward the development of interprofessional competencies including, but not limited to, values/ethics, communication, professional roles and responsibilities, and teamwork. 7. The curriculum plan includes course syllabi that are comprehensive and inclusive of all CAPTE expectations. 8. The curriculum plan includes learning objectives stated in behavioral terms that reflect the breadth and depth of the course content and describe the level of student performance expected. 9. The curriculum plan includes a variety of effective instructional methods selected to maximize learning. Instructional methods are chosen based on the nature of the content, the needs of the learners, and the defined expected student outcomes. 10. The curriculum plan includes a variety of effective tests and measures⁴³ and evaluation processes used by faculty to determine whether students have achieved the learning objectives. Regular, individual testing and evaluation of student performance in the cognitive, psychomotor, and affective domains is directly related to learning objectives and includes expectations for safe practice during clinical education experiences.

	<ol style="list-style-type: none"> 11. [distance education] 12. The curriculum plan includes clinical education experiences for each student. 13. The series of courses included in the professional curriculum is comprised of at least 90 semester credit hours (or the equivalent) and is completed (including clinical education) in no less than 6 semesters or the equivalent. The clinical education component of the curriculum includes a minimum of 30 weeks of full-time clinical education experiences. 14. The institution awards the Doctor of Physical Therapy (DPT) as the first professional degree for physical therapists at satisfactory completion of the programme.
Standard 7	The curriculum includes content, learning experiences, and student testing and evaluation processes designed to prepare students to achieve educational outcomes required for initial practice in physical therapy and for lifelong learning necessary for functioning within an ever-changing health care environment
Required Elements	<ol style="list-style-type: none"> 1. The physical therapist professional curriculum includes content and learning experiences in the biological, physical, behavioral and movement sciences necessary for entry level practice. Topics covered include anatomy, physiology, genetics, exercise science, biomechanics, kinesiology, neuroscience, pathology, pharmacology, diagnostic imaging, histology, nutrition, and psychosocial aspects of health and disability. 2. The physical therapist professional curriculum includes content and learning experiences in communication, ethics and values, management, finance, teaching and learning, law, clinical reasoning, evidenced-based practice and applied statistics. 3. The physical therapist professional curriculum includes content and learning experiences about the cardiovascular, endocrine and metabolic, gastrointestinal, genital and reproductive, hematologic, hepatic and biliary, immune, integumentary, lymphatic, musculoskeletal, nervous, respiratory, and renal and urologic systems; system interactions; differential diagnosis; and the medical and surgical conditions across the lifespan commonly seen in physical therapy practice. 4. The physical therapist professional curriculum includes content and learning experiences designed to prepare students to achieve educational outcomes required for initial practice of physical therapy.
Standard 8	The programme resources are sufficient to meet the current and projected needs of the programme
Required Elements	<ol style="list-style-type: none"> 1. The collective core faculty is sufficient in number to allow each individual core faculty member to meet teaching, scholarship and service expectations and to achieve the expected programme outcomes through student advising and mentorship, admissions activities, educational administration, curriculum development, instructional design, coordination of the activities of the associated faculty, coordination of the clinical education programme, governance, clinical practice, and evaluation of expected student outcomes and other program outcomes. 2. The programme has, or has ensured access to, adequate secretarial/administrative and technical support services to meet expected programme outcomes. 3. Financial resources are adequate to achieve the programme's stated mission, goals, and expected program outcomes and to support the academic integrity and continuing viability of the programme. 4. The programme has, or has ensured access to, space, equipment, technology and materials of sufficient quality and quantity to meet programme goals related to teaching, scholarship and service. 5. The resources of the institutional library system and related learning resource centers are adequate to support the needs and meet the goals of the programme, faculty and students.

	<ol style="list-style-type: none">6. The clinical sites available to the programme are sufficient to provide the quality, quantity and variety of expected experiences to prepare students for their roles and responsibilities as physical therapists.7. There are effective written agreements between the institution and the clinical education sites that are current and describe the rights and responsibilities of both parties. At a minimum, agreements address the purpose of the agreement; the objectives of the institution and the clinical education site in establishing the agreement; the rights and responsibilities of the institution and the clinical education site, including those related to responsibility for patient/client care and to responsibilities for supervision and evaluation of students; and the procedures to be followed in reviewing, revising, and terminating the agreement.8. Academic services, counseling services, health services, disability services, and financial aid services are available to programme students.
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Table 2. CAPTE set of standards for physical therapist education programmes (reproduced from (CAPTE, 2017))

Concluding Remarks

Referring to literature and after investigating the quality criteria of Physical Therapy program; it was found that there are almost identical core standards of the different accrediting bodies particularly the professional standards with emphasis on education and research. The clinical curriculum component percentage is a matter of quality with regard to the reflected specific competencies that will be acquired by the graduates. A balance is sought between clinical and class-based education.

Nursing Programmes

Global standards for initial education of nurses and midwives

According to the World Health Organization - Human Resources for Health - (WHO, 2009), several reasons are behind the need for global standards for education of health professionals. Three are enumerated in (WHO, 2009):

- The increasing complexity in health-care provision;
- The increasing number of health professionals;
- The need to assure more equitable access to health care.

The process followed to define a set of global standards is defined in (WHO, 2009). These standards are reproduced in the following table.

1. Programme Graduates	1.1. Outcomes 1.2. Programme graduate attributes
2. Programme Development/Revision	2.1. Governance 2.2. Accreditation 2.3. Infrastructure 2.4. Partnerships
3. Programme Curriculum	3.1. Curriculum design 3.2. Core curriculum 3.3. Curriculum partnerships 3.4. Assessment of students
4. Faculty	4.1. Academic faculty 4.2. Clinical faculty 4.3. Professional development of faculty
5. Programme Admission	5.1. Admission policy and selection 5.2. Student type and intake

Table 3. Global standards for the initial education of professional nurses and midwives (reproduced from (WHO, 2009)).

Canadian Accreditation of Schools of Nursing

The Canadian Accreditation of Schools of Nursing (CASN) has developed an Accreditation Programme that is guided by specific core values and fundamental principles. The CASN accreditation values are defined in (CASN, 2014):

Respect	Regard for, and appreciation of, others
Fairness	Openness to reason, freedom from bias, objective, and equitable
Confidentiality	Protection of the identity, privacy rights, and anonymity of individuals and sources of information
Transparency	Clear articulation of the structure, process, and steps of the accreditation program and an accreditation review, and provision of relevant information
Accountability	Responsibility and answerability for following policies, processes, and procedures of the accreditation programme
Integrity	Honesty and adherence to moral and ethical principles

Table 4. CASN Accreditation Values (Reproduced from (CASN, 2014))

Its standards are divided into two sets; one applies to the school of nursing itself, referred to as the educational unit, and the other applies to the nursing education program. In addition, the program provides two accreditation paths: path A is for new programs or new collaborations, whereas path B is for existing programs. Both use the same standards but a path A review is more formative, and the school must undergo a path B review within two years of the first graduates.

The standards for each nursing education program are four: program framework, knowledge-based practice, professional growth and evaluation. Each nursing program is expected to reflect the mission, philosophy, and goals of the educational unit. These should be manifested in a program curriculum that facilitates the development progressively of professional growth in its learners. The standards statements and the corresponding descriptors and key elements are provided in the following.

Programme Framework	
Statement	The program framework articulates a clear and coherent foundation for excellence in nursing education.
Descriptor	The programme framework identifies key components of a nursing curriculum including clear statements of student outcomes, and a program structure (planned sequence of learning opportunities) that is anchored in nursing knowledge, captures current and emerging trends, and includes appropriate learning processes (pedagogy).
Key Elements	<ol style="list-style-type: none"> 1. The curriculum is based on clear statements of expected outcomes that are congruent with the program’s mission and goals... 2. The approaches for teaching, learning, and evaluation of learners’ performances ... facilitate achievement of the expected learner outcomes. 3. The curriculum provides a sequence of learning opportunities...and provide a logical flow for students as they move through the programme. 4. The curriculum provides learning experiences related to primary health care, health promotion, prevention, curative, supportive, rehabilitative, and end-of-life care, across the life span of individuals, families, groups, communities, and populations; promotes interprofessional practice, and addresses regulatory entry-to-practice competencies. 5. The curriculum prepares students to address complex health issues that affect clients in a variety of settings. 6. The curriculum prepares graduates with general, foundational knowledge in the humanities, sciences, and social sciences, necessary for professional nursing practice, and for preparing graduates to address current and emerging needs of society. 7. The sequence, selection, and implementation of planned practice experiences support learner achievement of the expected outcomes and entry-to-practice competencies.
Knowledge-based Practice	
Statement	Learner engage progressively in effective, knowledge-based practice.
Descriptor	The programme provides opportunities for learners to develop knowledge, skills, and attitudes in using relevant information, communication technology, critical thinking, and clinical reasoning, in the delivery of collaborative client-centered care.
Key Elements	<ol style="list-style-type: none"> 1. The programme provides learning opportunities to apply knowledge from nursing and related fields, and to use clinical reasoning skills to analyse and interpret practice data, draw conclusions, and plan care. 2. The programme provides progressive learning opportunities for students to acquire information from a variety of sources and apply critical appraisal skills related to

	<p>evidence.</p> <ol style="list-style-type: none"> 3. The programme provides learning opportunities that develop students' ability to use information communication technology in accordance with professional and regulatory standards and workplace policies. 4. The programme provides learning opportunities that develop students' ability to use information and communication technologies in the delivery of patient/client care.
Professional Growth	
Statement	Learners develop personally and professionally throughout the programme
Descriptor	The programme provides opportunities for learners to develop the knowledge, skills, and attitudes to provide safe, ethical, and client-centred care as a member of the interprofessional team.
Key Elements	<ol style="list-style-type: none"> 1. The programme provides opportunities for learners to develop practice patterns that contribute to a culture of patient safety. 2. The programme develops learners' abilities to anticipate, recognize, and manage situations that place patients at risk. 3. The programme develops students' understanding of and ability to recognize, respond to, and disclose adverse events and to adopt practices that constitute continuing improvement of competence. 4. The programme provides opportunities for students that foster self-regulation, the development of accountability and responsibility for one's practice, and ensures their ability to deliver safe, competent, ethical nursing care. 5. The programme provides opportunities for students to demonstrate performance of nursing practice standards within their licensing jurisdiction. 6. The programme provides students with opportunities to understand and apply existing codes of nursing ethics, guidelines, and standards for nursing practice in clinical situations. 7. The programme provides opportunities for students to develop functional working relationships, including intra/interprofessional and intersectoral collaboration. 8. The programme provides opportunities for students to develop theoretical and practical knowledge of relational practice, cultural safety, and social and political advocacy.
Evaluation	
Statement	On-going comprehensive evaluation continually improves program outcomes
Descriptor	Timely improvements of the programme result from rigorous monitoring and evaluation of student learning, the effective delivery of the programme, and the relevance of the programme and its delivery to current nursing practice.
Key Elements	<ol style="list-style-type: none"> 1. An evaluation plan guides the assessment of the curriculum, programme delivery, and programme outcomes. 2. There is on-going implementation of the evaluation process, which includes data collection from students, faculty, graduates, employers, and other relevant stakeholders. 3. Students' and graduates' ability to provide safe, ethical nursing care, and to meet the entry-to-practice competencies and standards of practice, is monitored and evaluated. 4. Evaluation data are used to make improvements to the programme.

Table 5. CASN accreditation standards for nursing programmes (reproduced from (CASN, 2014)).

Concluding Remarks

From the previously demonstrated examples, one can conclude that nursing programs, world-wide, need continuous development of the standards to cope with the variations of Degree's requirements which are different from one country to the other. Optimization of the standards with emphasis on good practice assists improving quality education and practice. Further studies are required at both national and international levels with regard to the academic standards and quality criteria of nursing programs. Further collaboration between the concerned parties including stakeholders will enhance better situations of nurses in the health care system.

Lessons learned

The literature review conducted within this workpackage yielded the following outcomes:

- The standards defined by different agencies for different programmes in different contexts share common elements. To our opinion this is naturally due to the fact that the object of evaluation, i.e. an academic programme, has the same facets and properties independently of the programme title and its context.
- The core standards defined in workpackage 5 independently of the domain cover well the domain of health and life sciences. Shaping those standards allows to have a perfect fit with the domain.
- In most of the reviewed standards, the role of professional associations seems to be crucial. The role of professional associations in the definition and review of the standards needs to be reinforced in Lebanon.
- The professional dimension is strongly present in the standards of health and life sciences programmes at different levels: practical or clinical education and training, clinical educators, involvement in the curriculum design, etc. This dimension needs to be clearly identified in the domain specific standards defined in the project.
- The universal or global dimension of the standards in this domain is also very visible and is related to the domain itself: Medicine, Pharmacy, Nursing, Physical Therapy and other programmes are often global despite the specific aspects related to the corresponding professions organisation in each context.

Standards for Health and Life Sciences Programmes

Based on the review presented in the previous section, the proposed academic standards for work package 7 as depicted in TLQAA+ project are defined in the following.

- i. Mission, Goals and Governance

- a. The programme has clearly defined, comprehensive mission that include measurable programme goals.
 - b. *The goals and mission must be revised regularly while assuring the participation of all stakeholders in the revision process.*
 - c. The programme's mission and goals are consistent with mission of the faculty and the University including, where applicable, contribution to strategic initiatives.
 - d. The programme has an organizational structure that supports the achievement of its mission, and the success of its students, faculty and staff.
 - e. *The programme needs to be clearly focused on the delivery of quality health and life sciences education and practice.*
 - f. *The programme has to include aspects of global health.*
 - g. *The programme describes lifelong learning which refers to continuing education in the knowledge and skills of health care practice.*
- ii. Curriculum
- a. Programme provides broad, well-integrated knowledge of the discipline, is responsive to changes in the field, and exhibits a curricular design that ensures graduates demonstrate disciplinary knowledge appropriate to their degree.
 - b. The academic programme has specific learning outcomes that are designed to meet the programme's intended purpose.
 - Learning outcomes are appropriate for the degree designation (i.e., associate degree vs. bachelor's degree vs. master's degree vs. doctoral degree or the level in the LQF when applicable).
 - Course requirements and delivery mechanisms provide sufficient opportunities for students to meet learning outcomes.
 - The programme learning outcomes address the major issues and concerns in the discipline or professional area.
 - c. The learning outcomes defined for the courses build together the programme learning outcomes.
 - d. The programme curriculum shall be aligned with the Lebanese Qualifications Framework when applicable.
 - e. *The programme identifies the future roles of the graduates according to each discipline as health care providers and offers appropriate foundation for future career in the corresponding discipline.*
 - f. *The curriculum involves the health needs of the community, health care delivery system and other aspects of social commitment.*

- b. The retention rate is sufficiently high to ensure viable completion numbers.
 - c. *The programme shows a reasonable rate of completion.*
 - d. The programme assesses and evaluates student achievement of the Programme learning outcomes rigorously through direct and indirect methods.
 - e. Formative and summative assessments inform faculty members and students of student progress in the programme. Assessment results are communicated in ways that enable improvements.
- v. Faculty
- a. The number, qualifications, and credentials of *core* faculty members are adequate.
 - b. *The number, qualifications, experiences of clinical or practitioners associated faculty members are adequate.*
 - c. *The interaction and cooperation between core faculty members and clinical and practitioners associated faculty members are well defined and efficient.*
 - d. Faculty resources are sufficient to meet the teaching, scholarship, service, and advising needs of the programme.
 - e. Faculty development is assured as appropriate to the teaching in the discipline and advancing disciplinary knowledge.
 - f. The programme regularly evaluates the effectiveness of faculty with respect to departmental, college, and institutional criteria. The evaluation includes teaching effectiveness, evidence of research, and service to the institution. The evaluation also includes scholarly activity, grants and awards.
- vi. Budget, Resources, and Facilities
- a. The programme's allocated resources are sufficient to support its goals and objectives. The resources include:
 - Financial resources
 - Human resources/Physical facilities (e.g., classrooms, laboratories) under the disposal of the student population and the programmes offered. Library resources and services support Technology resources (e.g., hardware, software and professional development) to advance teaching and learning
 - b. *The clinical or other practical infrastructures are available and sufficient for the clinical and/or practical parts of the programme.*
 - c. Policies are in place to ensure the safety and security of students, faculty and staff.
- vii. Continuous Improvement

- a. The programme engages in periodic self-review, has established evaluation procedures, and shows evidence of improvements based on these processes.
- b. Multiple direct and indirect assessments are used to inform continuous programme improvement.
 - Assessments are linked to the programme's mission and goals
 - Assessments include student performance in courses, labs and clinical experiences, and alumni performance in the workforce
 - Faculty members are involved in defining the expected outcomes and in determining whether these outcomes are achieved
 - Assessments provide faculty with the opportunity to examine student performance in the context of progressively more challenging problems, projects, and standards for performance
- c. The programme engages in periodic self-evaluation, has established evaluation procedures, and shows evidence of improvements based on these processes.
- d. *Self evaluation cover both academic and clinical/practical parts of the programme.*
- e. Faculty and administrators regularly review the effectiveness of the assessment system.
- f. Assessment results are available to stakeholders, including faculty members and students.

Sectoral Qualifications Framework

In workpackage 1 of the project, the LQF developed within the ETF project has been evaluated and adopted after minor changes. In this section, the descriptors of levels 6 and 7 are shaped to both the nursing domain and the general medical studies domain. Other sectoral transformations will be suggested and integrated in future versions of this document. The following table provides these descriptors for knowledge, know-how and social skills after recalling the general descriptor of the LQF.

Nursing domain

	Level 6	Level 7
Knowledge	<p>Has in-depth knowledge in a sphere of work or study requiring a critical understanding of theories and principles applicable to a range of professional situations and diverse studies.</p> <p>Has an understanding of relevant biological, social and related sciences as they apply to nursing practice.</p> <p>Integrate knowledge and has an understanding of a systematic approach to care and a specific range of nursing interventions and of the concepts and methods that pertain to clinical practice skills and that are essential for effective and safe nursing practice.</p> <p>Critically analyse and evaluate relevant knowledge in nursing sciences and health promotion.</p>	<p>Has highly specialised knowledge, some of which are in the vanguard of knowledge in a sphere of work or study, based on original ideas and/or research. Has critical awareness of knowledge in a certain field and at the interface of several fields.</p> <p>Demonstrate the integration of knowledge from a broad range of disciplines and of major research methodologies relevant to and allowing the development of the nursing domain.</p> <p>Demonstrate a knowledge base necessary to exercise higher levels of judgement and decision making within nursing practices.</p> <p>Generate nursing knowledge and innovative clinical practices.</p>
Know-how	<p>Can devise technical, methodological and conceptual solutions and demonstrate expertise and innovative ability to resolve complex and unpredictable problems in a specialist sphere of work or study, using advanced skills.</p> <p>Assist individual, families and groups in achieving optimum health, independence, recovery or a</p>	<p>Can solve problems relating to research and innovation, to develop new knowledge and new procedures by mobilising highly-specialised skills.</p> <p>Can integrate knowledge from different areas and communicate the knowledge and the results of activities with specialists and non-specialists.</p> <p>Demonstrate expert skills in providing care within practice framework and multidisciplinary team.</p>

	<p>peaceful death in a professional caring manner.</p> <p>Provide and manage direct practical promotional, preventive, curative, rehabilitative or supportive nursing.</p> <p>Plan and initiate care and treatment modalities within agreed interdisciplinary protocols and evaluate their effectiveness.</p> <p>Identify and promote health promotion strategies and priorities.</p>	<p>Conduct a comprehensive health needs assessment as the basis of independent nursing practice within a specified area.</p> <p>Assess and critically evaluate the complex concepts underpinning professional nursing practices.</p> <p>Act as an educational resource for health care professionals.</p> <p>Master different approaches to research and justify their use in practice.</p>
Social skills	<p>Can implement unpredictable complex technical or professional activities or projects, including responsibilities in terms of taking decisions in professional or study contexts requiring one to adapt/adaptation to new technologies and methods and to new forms of organisation.</p> <p>Can take on responsibilities in connection with individual and collective professional development.</p> <p>Establish and maintain therapeutic interpersonal relationships with patients and communities.</p> <p>Effectively manage the nursing care of clients.</p> <p>Demonstrate the ability to team work.</p> <p>Educate individuals and groups to maintain and promote health care.</p> <p>Respect the codes and ethics of the nursing practices.</p>	<p>Can act on complex, unpredictable professional or study contexts that require new strategic approaches.</p> <p>Can make judgements and exercise responsibilities, considering the social and ethical aspects associated with the decisions.</p> <p>Can take on responsibilities to contribute to knowledge and professional practices and/or to revise the strategic performance of teams.</p> <p>Demonstrate autonomy, accountability, authority, leadership and responsibility in nursing.</p> <p>Actively contribute to the nursing knowledge of the nursing team and generate and transmit innovative practices.</p> <p>Review critically the working of teams and demonstrate skills in management of conflict.</p> <p>Assure the respect of and develop the codes and ethics of nursing practices.</p>

Table 6. Suggested sectoral qualifications framework for the nursing levels 6 and 7 of the LQF.

General Medical Domain¹⁴

A medical programme framework identifies six competencies in medical education. These are:

- Medical knowledge
- Patient case
- Interpersonal and communication skills
- Practice-based learning and improvement
- Systems-based practice
- Professionalism

These competencies are grouped in the sectoral LQF at level 8 in the following table.

Level 8	
Knowledge	<p>Has knowledge at the most advanced frontier of a sphere of work or study and at the interface of several fields.</p> <p>Demonstrate an understanding of the physical, psychological, pharmacological, and ethical matters that impact patient care and show the ability to discuss the structure and function of the human body at the whole body, organ system, organ, tissue, cellular and molecular levels.</p> <p>Demonstrate an understanding and the ability to use the most advanced knowledge in genetics, biochemical basis of cellular function, immunology, epidemiology, statistics.</p> <p>Recognise normal psychological development.</p> <p>Identify main pathological mechanisms.</p> <p>Analyse the principles of both curative and palliative therapeutics necessary to provide the best therapeutic options.</p> <p>Discuss the role of health care policies in improving patient care, including non-biological determinants of health, economic, psychological, social and cultural factors.</p>
Know-how	<p>Can deal with critical problems of research and/or innovation and explore new spheres, extend and redefine existing knowledge or professional practices by mobilising the most advanced and most specialised skills and techniques, including in relation to synthesis and evaluation.</p> <p>Perform a complete and focused physical exam taking into consideration the patient context by gathering and analysing the patient's information.</p> <p>Apply the most advanced clinical, laboratory, imaging, pathology and pathophysiological principles and exams to diseases.</p> <p>Develop differential diagnosis and design an optimal treatment in clinical medicine and patient care.</p> <p>Plan the patient's investigations and management needs, and use information technology and other advanced resources for this purpose.</p> <p>Demonstrate understanding of the need to collaborate with others in caring for patients and appraise the need for requesting consultation with other</p>

¹⁴ Acknowledgment: Special thanks to Dr. Khachab for providing the necessary information to build this section.

	health care professionals for the well-being of the patient. Practice patient confidentiality.
Social skills	Can demonstrate a high level of authority, innovation, autonomy, scientific or professional integrity and a sustained commitment to the production of new ideas or new processes in a sphere in the vanguard of work or study, including in relation to research. Apply the medical profession ethical principles and discuss the role of medical jurisprudence in health care. Demonstrate honesty and integrity in all interactions with patients, families, colleagues, and the healthcare team. Demonstrate a commitment to scientific knowledge and improvement of care quality. Promote access to medical care. Interpret information about health indicators to identify needs of communities and plan appropriate interventions. Analyse the organisation, financing, and delivery of health care and apply the principles of cost-effectiveness. Determine personal and professional conflicts of interest.

Table 7. Suggested sectoral qualifications framework for the general medical education level 8 of the LQF.

Conclusions

This document presented an bibliographical review of standards in different disciplines of the domain health and life sciences. Based on this study, the core standards have been broken down to specific ones for this domain. Moreover, specific descriptors for nursing education in level 6 and 7 have been proposed to add a sectoral dimension to the LQF.

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