



ESTONIAN QUALITY AGENCY  
FOR HIGHER AND VOCATIONAL EDUCATION

# Report on Quality Assessment of Study Programme Group of Medicine

## University of Tartu

2020

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## 1. Introduction

### **Abbreviations used in this document**

*CPC - Curriculum Programme Committee*

*DSP - Dentistry Study Programme*

*HP – Health Professions*

*MSP - Medicine Study Programme*

*PhSP - Pharmacy Study Programme*

*PMs – Panel Members*

*SER – Self-evaluation Report*

*SP, SPG -Study Programme, Study Programme Group*

*UT – University of Tartu*

### Quality assessment of study programme groups on first and second cycle of higher education

Quality assessment of a study programme group involves the assessment of the conformity of study programmes, the studies and development activities that take place on their basis to legislation, national and international standards and developmental directions with the purpose of providing recommendations to improve the quality of studies.

**The goal of the quality assessment of a study programme panel** is supporting the internal evaluation and self-development of the institution of higher education. Quality assessment of study programme groups is not followed by sanctions: expert assessments should be considered as recommendations. Quality assessment of a study programme group takes place at least once every 7 years based on the regulation approved by EKKA Quality Assessment Council for Higher Education [Quality Assessment of Study Programme Groups in the First and Second Cycles of Higher Education](#).

**The aim of the assessment panel** was the evaluation of the Study Programme Group (SPG) of Medicine at the University of Tartu (UT).

The team was asked to assess the conformity of the study programmes belonging to the SPG and the instruction provided on the basis thereof to legislation and to national and international standards, and/or recommendations, including the assessment of the level of the corresponding theoretical and practical instruction, the research and pedagogical qualification of the teaching staff and research staff, and the sufficiency of resources for the provision of instruction.

The assessment took place in December 2019. Estonian Quality Agency for Higher and Vocational Education (EKKA) compiled an international assessment panel.

**The following persons formed the assessment team:**

<b>Janusz Janczukowicz</b>	Vice Dean for Education and Assessment Methodology, Medical University of Lodz- MUL (Poland)
<b>Andrea Olschewski</b>	Vice Rector for Medicine and Dean of the Medical Faculty Johannes Kepler University, Linz (Austria)
<b>Olli-Pekka Lappalainen</b>	Assistant professor, University of Helsinki (Finland); Ministry of Social Affairs and Health, Council for Choices in Health Care in Finland
<b>Jouni Hirvonen</b>	Dean, Faculty of Pharmacy; Professor of Pharmaceutical Technology; University of Helsinki (Finland)
<b>Riho Tapfer</b>	Association of Pharmaceutical Manufacturers in Estonia, Head of Executive Board (Estonia)
<b>Gerlin Gil</b>	Student, Tallinn University of Technology; Chairman of Student Body; Project Manager, TalTech Development Fund (Estonia)

**Assessment process**

The assessment process was coordinated by Ms Tiia Bach (EKKA).

Before arriving to Estonia the Panel Members (PMs) were provided with the set of documents including:

- UT Self-evaluation report,
- Appendices 1-17 to self-evaluation report,
- Estonian higher education quality assessment regulations and standards,
- Documents regarding previous (2014) evaluation.

Upon the analysis of provided documents the site visit programme was developed and agreed with the Panel Members (PMs), EKKA Coordinator and UT representatives.

After the planning phase, the work of the assessment team in Estonia started on Monday, 2 December 2019, with the meeting at the EKKA Office aimed at discussing the Estonian Higher Education System as well as the EKKA assessment standards and procedures. The members of the team agreed on the overall questions and areas to discuss during the site visit and meetings with the UT, Medical Faculty and the SPG leaders and representatives as well as students and stakeholders. The distribution of tasks between the members of the panel was performed and the detailed schedule of the site visits was agreed.

During the following two days (Tuesday, 3 December and Wednesday, 4 December), meetings were held with the representatives of the University of Tartu. On Thursday, 5 December, the team held an all-day meeting in the EKKA Office, during which both the structure of the final report was agreed and findings of team meetings were compiled in a first draft of the assessment report. This work was executed in a cooperative way and members of the team deeply analysed their views on the relevant topics.

In the following sections of the report, the assessment team summarises general findings, conclusions and recommendations which are relevant across the whole SPG, followed by evaluation of individual SPs. The team provides an external and objective perspective on the programmes and the contexts within which they are delivered. The intention is to provide constructive feedback which may form the basis upon which further improvements in the quality of the programmes may be achieved.

### Impressions of the institution, self-assessment report and of the site visit

The UT self-assessment report was written in a clear and concise way and served well as the foundation for further analysis of the SPG during the site visit. All appendices to the self-assessment report were additionally helpful both in understanding the “big picture” and all the important details of the curricula. It is worth noting, the UT team provided the panel with additional essential data upon panel’s request during the site visit.

The study visit was organised in an exemplary way and followed exactly the previously agreed programme. The panel was provided with the environment facilitating its effective work and interactions with the interviewees. Moreover, PMs were impressed with the positive involvement of all UT representatives including the faculty members guiding the PMs during two visits to teaching and learning facilities. During those visits, the PMs could also informally observe and experience the friendly and student-centred qualities of the UT educational environment.

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## 2. Overview of the study programme group of Medicine, University of Tartu

Study programme	Level
Medicine (in Estonian)	Integrated Bachelor’s and Master’s programme
Medicine (in English)	Integrated Bachelor’s and Master’s programme
Dentistry	Integrated Bachelor’s and Master’s programme
Pharmacy	Integrated Bachelor’s and Master’s programme

The University of Tartu is the only higher education institution in Estonia providing studies in the field of Medicine, Dentistry and Pharmacy at two levels of higher education. The study programmes of Medicine and Pharmacy are also provided at doctoral level, providing 3rd level of higher education.

All four integrated bachelor’s and master’s programmes within the study programme group of Medicine are in the Faculty of Medicine, which is one of the oldest faculties of the University of Tartu. It was opened at the same time with the establishment of Academia Gustaviana in 1632 and has been part of the university ever since. In Estonia, the Faculty of Medicine is the only medical faculty.

The mission of the Faculty of Medicine, as stated in the Self-evaluation Report, is to educate high-level specialists in the field of medicine, healthcare, public health, sport science and physiotherapy.

### Dynamics in the number of students for the period 2013–2019 in the SPG of Medicine

	Academic year	Total number of students	Admission of students	Admitted international students	Dropout number	Graduates
<b>Medicine (in Estonian) (80418)</b>	2018/2019	883	182	0	n/a*	n/a
	2017/2018	863	167	0	34	136
	2016/2017	888	173	0	52	151
	2015/2016	891	168	2	41	145
	2014/2015	890	155	0	43	133
	2013/2014	892	142	0	27	139
<b>Medicine (in English) (118617)</b>	2018/2019	129	22	22	n/a	n/a
	2017/2018	108	22	22	2	
	2016/2017	86	23	21	2	
	2015/2016	67	23	22	6	
	2014/2015	47	24	23	2	
	2013/2014	23	23	23	2	
<b>Dentistry (80420)</b>	2018/2019	150	31	0	n/a	n/a
	2017/2018	146	32	0	7	23
	2016/2017	143	31	0	6	25
	2015/2016	140	32	0	4	25
	2014/2015	141	30	0	5	28
	2013/2014	141	31	0	7	25
<b>Pharmacy (80419)</b>	2018/2019	124	32	0	n/a	n/a
	2017/2018	120	35	0	12	20
	2016/2017	125	35	0	23	18
	2015/2016	126	34	0	16	22
	2014/2015	142	34	1	26	25
	2013/2014	137	36	0	8	24

\*n/a – data for the academic year 2018/2019 will be available after 30 September 2019.

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### 3. Main changes on the basis of recommendations of the last quality assessment of the study programme group of Medicine

The report from the previous Quality Assessment of the Study Programme Group (2014) supplemented with the current Self-evaluation Report (SER) and with the information obtained during the site visit allowed to analyse the effectiveness of implementation of the previously issued recommendations. Summarising shortly the panel impression, while the PMs appreciate the directions of the curriculum development since the previous evaluation, at the same time the PMs emphasise the need to implement future substantial changes in the pace corresponding with the pace of changes in the contemporary world. That results in our first major recommendation to develop the detailed timeline for implementation of recommendations and suggestions based on the clear list of the outputs and outcomes to be achieved (see below).

As the results of the above analysis are directly related to evaluation of the current status of the SPG, they are included in the following chapter applying to all SPs.

The panel highly appreciates the self-reflection and identification of the SPG weaknesses presented in the SER. At the same time the panel sees the need to indicate in this document the weakness identified in SER, to assure that they will remain in the focus of planning the further curriculum development.

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### 4. Summary of general findings and recommendations at the Study Programme Group level (applies to all programmes)

#### Introduction

Upon the detailed analysis of the provided documentation, in-depth interviews with representatives of the UT all levels management, teaching staff, administration, students, alumni and external stakeholders, followed by multiple PMs meetings and the closing session the EKKO Office, it was agreed that all the data obtained during the evaluation process were coherent and sufficient to draw conclusions regarding the assessed UT Study Programme Group of Medicine.

The PMs emphasise that this section summarises the feedback applying to all study programs (Dentistry, Pharmacy, Medicine) and its conclusions and recommendations should be analysed and implemented by all SPG sub-teams.

#### General reflection and directions for change

The panel appreciates that one of the key elements of the University mission is the focus on graduates who change the world and acknowledges the complexities of providing the balance between fulfilling the global and local needs regarding the Health Professions (HP) graduates. To achieve the above goal, it is necessary that the curriculum development process is constant and based not only on the high

level evaluation but also on the horizon scanning ensuring that curricula can quickly and effectively respond to the changes and needs of local and global communities. The high importance of Sustainable Development Goals set by the UN and the concept of One Health bring the need for harmonisation of HP curricula and for effective implementation of interprofessional education for the future interprofessional practice. Moreover, the contemporary interprofessional education reframes its previously narrow scope and brings to joint education the other professions, including IT, administration, veterinary medicine and environmental sciences. The panel strongly recommends not only implementation of the interprofessional courses for Medicine, Dentistry and Pharmacy but also identifying opportunities for involving in interprofessional education students of the other HP (e.g. via developing educational cooperation with Tartu Health Care College and the other faculties of the UT). Consequently, the representatives of all SPs (Medicine, Dentistry, Pharmacy) should be included in all SPs Curriculum Committees.

As the ultimate goal of HP education is providing the best possible patient care and patient safety, it is necessary to acknowledge that patients are the key stakeholders of HP curricula. The panel appreciates inviting the patient organisation representative to the site visit meeting and recommends involving patients' representative in Curriculum Programme Committees. This should be supplemented with developing cooperation with the European Patients organisations (e.g. EPF).

Education is currently perceived as an example of Complex Adaptive Systems with all its elements constantly mutating and working effectively only if well coordinated. As an example may serve brought to the panel's attention from multiple perspectives, by multiple interviewees problems with students' mobility based on Erasmus+ programme. These problems arise not from the inherent faults of the Erasmus+ but from the very low flexibility of the subject based curriculum and not sufficiently defined learning outcomes.

The panel sees the need for paradigmatic change regarding the curriculum development, from the reactive responding to evaluation recommendation ("fix it if it's broken" approach) towards proactive identification of directions for change and developing the strong educational change leadership workforce. The core element of this paradigm is the constant curriculum development process drawing from the best practice examples and based on the evaluation cycle.

It should be emphasised that there are multiple international good practice examples and recommendations available for the areas indicated as weaknesses in this report. Moreover, there are multiple evidence based resources supporting the curriculum development (e.g. BEME Systematic Reviews and AMEE Guides). Consequently, the panel suggests establishing the unit (e.g. Centre for Health Professions Education) composed of the staff with degrees in medical (HP) education, working with the external experts, leading and advising on the change process, designing and implementing CPD activities and monitoring the progress of faculty development.

In addition to the above suggestions, one of the ways of enhancing the proactive curriculum development is forming the external expert advisory board working with the faculty on a regular basis, sharing the expertise and providing the constructive feedback. Apart from bringing the expertise and sharing own experience, such panel allows changing the perceptions of external evaluations from the often stressful, incidental events to the constant, creative co-creation.



Finally, the PMs indicate the need for implementing the explicit and effective diversity, equal access and participation policies to assure providing all students, teachers and administration with the friendly, inclusive and supporting learning and working environment.

## Study programmes and study programmes development

### **PREVIOUS RECOMMENDATIONS\***

*All Study Programmes - Explore non-academic criteria for admission.*

*M1 - Map the learning outcomes of the courses to the programme and identify where any gaps occur.*

*M3 - Explore how students learn about topics such as communication, teamwork, leadership, ethics, diversity and patient safety and how they will be assessed.*

*M6 - Develop an assessment strategy which includes assessment of skills and behaviours not just knowledge. This might include assessment of clinical consultations and OSCE.*

*M7 - Review the teaching and assessment of clinical skills.*

*M8 - Consider using more placements in other healthcare centres for clinical teaching.*

*P2 - The programme should be modernised to reduce the burden of factual knowledge and allow time for reflection and critical thinking skills to develop.*

*P4- Encourage students to develop their communication skills with patients and other health professionals to strengthen their confidence and professional identity.*

*P6 - Establish a collaborative group between pharmacy staff and representatives of pharmaceutical activity in society for the sustainable development of high quality pharmacy programme.*

*D2 - The programme team could consider opportunities for interprofessional learning with dental hygienist and dental technicians.*

*\* recommendation codes are used according to the source document: "Quality Assessment of the Study Programme Group of Medicine at the University of Tartu, Estonia, 28th and 29th of October 2014"*

The admissions requirements appear very clear although they are still based on the results of state examinations only (except the Medicine in English programme, which also requires a motivation letter). As recommended after the previous evaluation, the UT should further explore what kind of qualities the University expects in Estonian HP graduates and take an additional pro-active approach for changing in the admission process, especially including additional aspects like cognitive skills, and the potential to develop professional attitudes.

According to the self-evaluation report, the SPG curricula were formally, initially approved by the university council in the 1990s and arise from the pre-existing course-based models. According to the SER, curriculum development and quality assurance are the foremost priorities of the Curriculum Programme Committee (CPC), whose primary objective is monitoring the quality of academic studies,

compliance of the curricula with higher education standards and other legislations, and meeting the expectations of the students, stakeholders, and community.

While the panel appreciates the progress towards proper identification of the learning outcomes it is explained in greater detail in the following sections of this report what should be the directions of this process.

Similarly, the panel appreciates implementation of the first educational modules focused on transferrable skills. Moreover, the PMs was happy to hear from the stakeholders group about “the last years’ doctors having better communication skills”. This feedback clearly indicates the need to further develop coherent patient-centred professionalism courses for all SPs (see e.g. the CanMEDS model). It is also recommended to further modify the curriculum content to reduce the excessive theoretical knowledge and focus on developing students’ skills and attitudes (see the section on teaching and learning).

The panel was not satisfied with the existing standards of assessment, especially related to the domains of skills and attitudes. This view is grounded not only in the provided documentation but also in data obtained from interviews. It should be emphasised that the contemporary assessment standards and instruments (e.g. OSCEs) can be implemented properly only in case of the integrated curriculum. This statement indicates the need for the holistic approach to curriculum development. Obviously, assessment of clinical skills needs to be strongly correlated with the catalogue of learning outcomes expected after particular phases of studies. To improve the reliability, validity and practicability of assessment, the panel draws the faculty attention to programmatic assessment, progress testing and workplace-based assessment.

The PMs couldn’t identify examples of good practice related to the previously recommended implementation of interprofessional education.

The PMs appreciate the already existing student’s feedback system. At the same time, learners’ opinions form the very important but lowest-level element of the Kirkpatrick model. There is a need for developing and implementing a coherent evaluation strategy at higher Kirkpatrick levels.

## Resources

### **PREVIOUS RECOMMENDATIONS**

*P5 - Ensure that there is adequate funding for covering the running costs and that the equipment of laboratories is modern and up to date.*

*D4 - Establish an unscreened clinic where students undertake initial diagnosis and treatment planning sessions to improve their confidence and prepare them for general dental practice.*

*D5 - Merge both clinics into a new Dental Clinic.*

*D6 - Identify funds for the ongoing capital replacement costs of major equipment and dental chairs.*

The panel was very happy to see multiple recent developments related to learning resources and learning environment. The panel was impressed with the new buildings, the currently developed new simulation centre and wide implementation of e-learning opportunities. The detailed feedback on these aspects is included in the following chapters.

## Teaching and learning

### **PREVIOUS RECOMMENDATIONS**

*P2 - The programme should be modernised to reduce the burden of factual knowledge and allow time for reflection and critical thinking skills to develop.*

*P3 - The practical training could be extended to hospitals and community pharmacies in the whole country.*

*D1 - From the first year, students should study and practise aspects of clinical dentistry.*

*D3 - Specialty and PhD models in Dentistry are at the current time not established, but they could be planned for the future and integrated in the new facility plan of a dental clinic in the next years.*

As indicated in the previous section, both the provided documentation and the very strong feedback from learners indicate the need for developing opportunities for learning clinical skills.

The feedback from students and graduates included statements: “students rather watch than do”, “it is possible to avoid ‘touching the patients’ during many clinical courses”, “maybe one student per group only applied surgical sutures”, “none of us performed gynaecological examination”, “a lot depends on individual teachers”, “clinical teachers don’t always know what are the particular clinical skills included in the learning outcomes for our phase of studies”. While the PMs understand the subjectivity of the above statements, at the same time they clearly indicate general students’ perceptions of their clinical learning opportunities and needs.

The PMs were happy to see the already implemented simulation-based learning activities and expect their further development in the new simulation centre. The panel reminds that the new simulation centre creates perfect opportunities for implementing the interprofessional education.

The panel indicates that one of the features of the contemporary HP education is its community orientation, including community-based learning opportunities.

## Teaching staff

### **PREVIOUS RECOMMENDATIONS**

*All Study Programmes - The University system of peer development and review should be rolled out in the study programme group of Medicine perhaps with a teacher portfolio.*

*M4 - Develop a staff development strategy particularly for clinical teachers, so that the teachers can help students learn in an active way.*

*M5 - Develop the ways where teachers can share and exchange what they are doing in their courses- perhaps an away day or a poster exhibition as well as regular meetings.*

*M10 - Develop a staff development strategy for clinical teachers, which includes learning about educational principles and active learning techniques.*

*P7 - Develop a staff development strategy for teachers, which includes learning about educational principles and active learning techniques.*

*P8 - Strengthen possibilities for international contacts and collaboration in pharmacy teaching and research.*

*P9 - Increase resources for recruitment of future staff on high academic level.*

The panel was happy to see positive responses to many of the above recommendations, including the annual teaching and learning conference, „e-learning day”, „visit a colleague initiative” and the prize awarded to the best teacher. To further develop the local community of practice and to increase its active integration with the global #MedEd network, the faculty should have more opportunities for international exchange and development of their teaching skills.

The panel emphasises the importance of further implementation of the coherent faculty development programme, obligatory not only for the newly employed staff but also for all preclinical and clinical teachers. According to SER and to the discussion with stakeholders during the site visit, there is a special need to provide hospital-based clinical teachers with the appropriate training, including precise information regarding the educational outcomes their students should achieve during the training under their supervision and the way to reliably assess these outcomes in all participating students.

While it is important to reward excellence in teaching (“best of the best”), it is equally important to develop clear criteria and methods of identification, promotion and remuneration of the good practice of faculty to motivate teachers to develop their educational knowledge and skills. Implementing the teachers’ portfolio suggested five years ago remains the recommendations of this panel. This should be followed by defining clear criteria regarding the motivating remuneration of didactic responsibilities.

Further development of the community of practice with the strong international links should result in enhanced understanding of the need for constant curriculum development and in enhancing the ownership of the change process. To achieve this goal the panel recommends providing faculty with training in educational change leadership. The locally organised faculty development opportunities should be supplemented with the face to face and e-learning international courses, site visits and

conferences (e.g. AMEE, ADEE, EAFP). The appropriate arrangements should be implemented to facilitate faculty Erasmus+ mobility, including the mobility of clinical teachers. The panel recommends developing strong cooperation and trust networks with the other medical schools around Europe. It is especially important that the Curriculum Programme Committee members should receive effective training in HP education, including curriculum development, teaching, learning and assessment strategies.

## Students

### PREVIOUS RECOMMENDATIONS

*All programmes -Explore fitness to practice processes.*

*M2 - Continue to involve both students and residents in leading the changes to the programme.*

*M9 - Find ways to ensure the students are informed of the changes made in response to their feedback.*

*P1- The programme team should look at ways of strengthening students' professionalism and their professional identity as pharmacists.*

*D7 - Increasingly support the Russian-speaking Estonian students with Estonian language classes.*

It is clear for the panel that students of the Medical Faculty are enthusiastic, well-motivated and willing to support the process of educational change at all SPs.

As all HP programmes are characterised not only by the great learning burden but also by significant emotional influence on learners caused by dealing with patients' illness and death, HP students require effective university support regarding their mental health wellbeing. Currently, the support seems to be provided only in form of counselling; however, it is very much limited due to the low number of the counselling staff. The University should be more proactive in addressing students' mental health needs and recognising that some students experience significant barriers to study including those related to mental health concerns. The panel indicates the need for developing adaptive learning opportunities for students with special educational needs.

The recommendation to explore the need for the fitness to practice process was clearly expressed the previous report. The PMs were worried receiving from multiple groups of interviewees information regarding the cases of students' academic fraud (e.g. using illegal help during the written exams) which frequently occur. The University has to increase the awareness of this situation and develop appropriate strategies for identification and remediation of professional lapses. This should be accompanied by complementary programme of teaching, learning and assessing professional values.

Students appreciate their current involvement in curriculum development. To further facilitate this active involvement in the change process, the panel suggests providing them with opportunities for development of methodological skills (e.g. ESME Student Online Course, involvement in research in medical education, participation in HP education conferences).

Recommendations and suggestions for all study programmes

Explanation / Aim	Recommendation
<p>To facilitate the process of implementing recommendations, to make the outcomes of this process measurable, to facilitate evaluation of curricular change</p>	<p><b>Developing the detailed schedule (e.g. the Gantt chart) presenting the timeline for implementation of recommendations and possibly suggestions.</b></p>
	<p><b>Developing the clear list of the outputs and outcomes to be achieved as the result of implementation of recommendations.</b></p>
<p>To implement the constant evaluation cycle as current evaluation is based on low levels of evaluation model.</p>	<p><b>Developing a coherent, higher levels of Kirkpatrick model- based evaluation strategy taking into account the identified outputs and outcomes, allowing supporting the curriculum development and monitoring the implementation of recommendations.</b></p>
<p>While the panel clearly sees multiple positive changes in the curriculum, the pace of implementation of previous recommendations is generally evaluated as too slow (see detailed sections below).</p>	<p><b>Increasing the pace of change towards the integrated curriculum with strong interprofessional elements, including implementation of the integrated assessment strategy.</b></p>
<p>Reducing excessive theoretical knowledge and increasing focus on clinical skills and attitudes is a fundamental direction of contemporary curricula development. The panel sees the need to continue this process at UT. The panel positively evaluates changes towards increasing clinical and practical elements of all programmes. At the same time, it is recommended to develop active learning opportunities in the work-place environment.</p>	<p><b>Further reducing the excessive theoretical knowledge and focusing on developing students' skills and attitudes.</b></p>
	<p><b>Developing active clinical learning opportunities.</b></p>
<p>The panel warmly welcomes the representative of patients attending the stakeholders meetings and sees this as the beginning of patients' active involvement in development of curriculum.</p>	<p><b>Increasing the role of patients as partners in medical education, including involving them as partners in curriculum development, teaching and assessment.</b></p>
<p>Current admission criteria are clear and well described. At the same time the admission process and criteria should be further discussed with the UT as the leader of this discourse.</p>	<p><b>Exploring the criteria for admission (identifying the expecting criteria, identifying the admission strategies best practice examples, exploring options for implementing the new criteria).</b></p>

<p>The panel is happy to see the introduction of courses focused on social competence and sees the need to create the coherent curriculum on professionalism for all SPs.</p>	<p><b>Developing or further developing the educational opportunities for learning and assessing the patient-centred social competence, intercultural skills and ethics to form the coherent, horizontally integrated curriculum on professionalism.</b></p>
<p>This recommendation from the previous report has not been implemented while it remains valid and important.</p>	<p><b>Implementing the teachers' portfolio.</b></p>
<p>The panel could hear multiple complaints regarding students' professional lapses. While this serious issue is well known to all higher education institution, there is a clear need to respond to this problem in a systematic way.</p>	<p><b>Developing the strategy of identification and remediation of professional lapses, including the fitness to practice procedures.</b></p>
<p>The panel was happy to hear about the existing consultation for students. Nonetheless, it is necessary to respond to students needs with special attention focused on their mental wellbeing. Moreover, following the international standards UT should develop the policies and consecutive measures to support all minority and special needs groups of students and employees.</p>	<p><b>Implementing the diversity, equal access and participation policies.</b></p>
	<p><b>Further development of student support systems.</b></p>
<p>The panel was happy to meet the enthusiastic teachers and to hear about multiple initiatives aimed providing them with better methodological competence. Nonetheless, both the panel's own opinion and feedback from teachers clearly indicates the need for development of the high quality faculty development programme. Moreover, feedback from students indicates the need for additional, specialist training for clinical teachers.</p>	<p><b>Developing the clear programme for supporting the faculty members' continuous development in teaching at all levels of the academic careers, establishing criteria of rewarding the good practice in teaching.</b></p>
	<p><b>Providing clinical teachers with the appropriate methodological training.</b></p>

Following the above recommendations, the panel suggests implementing further developments listed below.

Explanation / Aim	Suggestion
To facilitate implementation of recommendations related to faculty development. To create a team of experts and change leaders for all SPG.	<b>Establishing the Centre for Health Professions Education.</b>
To make the change process a constant element of the UT strategy. To bring external expertise. To aim at becoming international leaders in health professions education.	<b>Forming the External Advisory Board.</b>
To enhance internationalisation of all SPG, to respond to processes of globalisation and migration of doctors, students and patients.	<b>Exploring the transferability of globally recognised competence frameworks (e.g. CanMEDS).</b>
To provide students with leading developments and standards in assessment.	<b>Implementing the programmatic assessment model.</b>
To prepare graduates for their future interprofessional, patient-centred practice.	<b>Developing cooperation with the other higher Estonian education institutions to provide students and staff with additional interprofessional learning opportunities.</b>
To further respond to students' needs, to further develop the student-centred strategies of UT.	<b>Establishing the student support and wellbeing centre, including counselling and diversity service, peer support, career centre, faith centre and students support in financial or residential issues.</b>
To enhance students' role as partners and leaders in education.	<b>Providing students with opportunities to develop their #MedEd knowledge and skills.</b>



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## 5. Study Programme in Dentistry

### Study programme and study programme development

#### Standards

- ✓ The launch or development of the study programme is based on the Standard of Higher Education and other legislation, development plans, analyses (including labour market and feasibility analyses), and professional standards; and the best quality is being sought.
- ✓ The structure and content of modules and courses in a study programme support achievement of the objectives and designed learning outcomes of the study programme.
- ✓ Different parts of the study programme form a coherent whole.
- ✓ The study programme includes practical training, the content and scope of which are based on the planned learning outcomes of the study programme.
- ✓ The study programme development takes into account feedback from students, employers, alumni and other stakeholders.

#### Evidence and Analyses

The Dentistry Study Programme (DSP) is coherent and fulfils the Standards of Higher Education in Estonia. The development of the Study programme has been reasonable since the previous evaluation in 2014. Now, students have more practical subjects related to dental profession already during their first study semester. Entrepreneurship course has been added to the curriculum, which is very useful for dentistry students as majority of dental medicine graduates work in private sector. The course provides the students with opportunity to further improved communication and teamwork skills.

The DSP is provided in Estonian language. During the study programme there is no officially organized contact or studies with international students, due to which the theoretical intercultural knowledge finds little opportunities for translation into practical skills. In a globalizing world it would be beneficial for the students to broaden their awareness of different cultures and their manners.

As emphasised in the section regarding the whole SPG, in the DSP there is still a remarkable need for interprofessional teaching and learning, especially with dental technicians, which should be taken in action by the programme development team. Additionally, the role of occupational health and especially occupational ergonomics remains still in minor role of the curriculum of dental education and could easily be increased e.g. by organizing joint studies with MSP and/or the Health Care College of Tartu.

Keeping the good from the past but being in the frontline of the progress in the dental education is a great challenge in improvement actions of dental education in the rapidly developing and changing medical field. For dental, as well as for medical students it is necessary to understand the complexity of the whole human body, the diseases and how to treat patients with different medical conditions. Some of the teachers indicated to PMs their concerns that the MSP does not provide sufficient knowledge of dental medicine to the medical students and the collaboration between the two disciplines could be significantly increased to benefit both student groups. The PMs find it very valuable that dental education is provided in the same faculty, together with medicine, although understanding each other's disciplines can clearly be improved.

Dropout level has decreased if compared to the previous evaluation. Study programme has been regularly overviewed and feedback of stakeholders (incl. students, potential employers, alumni) has been considered and taken into action.

### Strengths

- The Curriculum Programme Committee is well diversified across different stakeholders including students, alumni, business representatives and academic staff.
- The curriculum of dental education is very practical and closely related to working life. All students will be verified to have best possible theoretical and practical skills at the end of studies.

### Areas of concern and recommendations

- The staff responsible for educational development should carefully review the curriculum on regular basis to find possible obstacles inhibiting the changes for modernizing the curriculum. The panel recommends using the ADEE guidelines for dental education by means of regular core analysis and implementation of the updated European standards of education more effectively for the development of this curriculum.
- Increasing the international connections and exchange by means of education would most likely enhance the motivation of continuous improvement of the curriculum too.

### Suggestion for further improvement

- The PMs suggest finding opportunities to add interprofessional education to the curriculum. The opportunities for interprofessional learning (joint courses, events) could be tried out with such professions as dental hygienists and dental technicians as there is a wide range of patient care and health education aspects concerning these professions in common. It could also be beneficial for all dental students to have an introductory subject to occupational physiological diseases and how to prevent them. The subject could improve students' knowledge on how to work in a right position and help them to maintain their health throughout their future professional career. This subject could be implemented during all three clinical study years repeatedly.

## Resources

### Standards

- ✓ Resources (teaching and learning environments, teaching materials, teaching aids and equipment, premises, financial resources) support the achievement of objectives in the study programme.
- ✓ There is a sufficient supply of textbooks and other teaching aids and they are available.
- ✓ Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).
- ✓ Resource development is sustainable.

### Evidence and Analyses

With the support of EU funds, the university will launch a renovated and reorganized for the needs of a modern dental education dentistry building for clinical studies in August 2020. The students and teaching staff are very grateful and eagerly looking forward to the new equipment and rooms. As the contemporary Dental Clinic is soon taken in use, the management of the discipline should also mind to ensure the modern dental materials and also enable use of high quality filling materials with high price to be taught to dental students when the teaching staff desires that.

Students reported to the evaluation panel that they often use various e-learning materials (e.g. online books, slides and videos) uploaded to Moodle platform by teachers. According to the comments given to the panel by both alumni and current students, some of the study materials should be reviewed as there are still compulsory study materials for exams, including some books from 1980s. Medicine is developing at an accelerating pace and updated learning materials are available, mostly in English language. According to comments given to the evaluation panel from all the interviewees except the teachers, there should be no obstacles for using contemporary learning material published in English in the dental education. Finally, all resources in Estonian language should be also up-to-date even if the original versions have been edited decades earlier, to ensure the highest education standard for all students.

### Strengths

- New clinic building with most modern equipment will be gradually opened in 2020.
- Preclinical facilities have all the necessary equipment and learning conditions of the rooms are excellent.
- In the near future, the different programmes of the Medical Faculty will be taught at the same campus area, and this should form the foundation for learning together and from each other.

- For dental education it is optimal that a well-equipped and modern dental laboratory is located within the university clinic.

#### Area of concern and recommendations

- It is an essential responsibility and absolute requirement in modern education for every academic teacher to review and update the study materials on a regular basis to avoid using outdated literature and other learning resources.

#### Suggestions for further improvement

- The evaluation panel suggests the teachers of the Institute of Dentistry to update the respective compulsory and recommended study materials presented in the study information system.
- The evaluation panel suggests the Institute of Dentistry to continuously keep ongoing discussion within the Medical Faculty for ensuring the availability of the most current clinical dental materials in dental outpatient clinic, as concerns regarding using the inexpensive and old-fashioned dental materials was clearly expressed to the PMs.

### Teaching and learning

#### Standards

- ✓ The process of teaching and learning supports learners' individual and social development.
- ✓ The process of teaching and learning is flexible, takes into account the specifics of the form of study and facilitates the achievement of planned learning outcomes.
- ✓ Teaching methods and tools used in teaching are modern, effective and support the development of digital culture.
- ✓ Practical and theoretical studies are interconnected.
- ✓ The organisation and the content of practical training support achievement of planned learning outcomes and meet the needs of the stakeholders.
- ✓ The process of teaching and learning supports learning mobility.
- ✓ Assessment of learning outcomes is appropriate, transparent and objective, and supports the development of learners.

#### Evidence and Analysis

The DSP is based on the supportive study environment, and teaching methods presented to the evaluation panel were modern and sufficient. The studies are based on gradually increasing standards of the dental treatment protocols and proceeding towards more challenging patient cases thus supporting the students' professional and transferable skills development. The PMs were delighted to

notice the modern 3D scanning technology to be implemented in the dental studies, indicating the digital dentistry being a part of the teaching and learning processes.

Studying is organised in both the large-group setting, individually or in small groups of eight students. Lectures are provided via the Moodle platform where students also have access to complementary study materials such as videos, additional reading materials, including also different quizzes and examinations where the assessment criteria are transparent and equal for all participants. The use of digital learning platform enables flexible theoretical studies unbound of time and place. Students have to individually prepare for each seminar.

Together with teachers the students reflect on the progress of their studies on regular basis and practice their manual skills first in a phantom laboratory and only after a successfully evaluated phantom training in clinical patient care setting in the dental outpatient teaching clinic. Organizing the studies in this manner, the teaching staff can easily ensure the interconnection of theoretical and practical skills of each student individually. Throughout their studies, students have to complete their online student portfolio where the professional development is reflected. This makes studying both exciting and effective.

Notwithstanding the progress in the use of modern technologies in the prosthodontics teaching, the evaluation panel was repeatedly informed by students, teachers, alumni and stakeholders of the Faculty that the learning opportunities and consequently, the learning outcomes of prosthodontics, are non-standardised (unequal) due to constant lack of patients in the dental outpatient teaching clinic.

### Strengths

- The curriculum is well-structured to support the learning process. The outcomes are in line with the European standards and presented logically in study information system.
- Teaching is mostly done in small groups which ensures that teachers provide supervision to all students, especially in the dental outpatient teaching clinic.

### Area of concern and recommendations

- The evaluation panel strongly recommends the Senior Management of the Institute of Dentistry to solve the problem related to lack of patients in prosthodontics teaching quickly and effectively to ensure the sufficient level of education for all dental students. The evaluation panel suggests considering if this part of teaching could be provided as outreach in the community clinics instead of the dental teaching clinic. Also, promotion campaigns with reduced special prices for dental prosthetic works could be considered as a solution of this urgent problem.

### Suggestion for further improvement

- The evaluation panel suggests to proceed towards a competency-based education, increasing in the curriculum cross-disciplinary teaching in various subjects (e.g. periodontology, oral health promotion, prosthodontics) and co-operation between medicine and dentistry. Additionally, close collaboration with the Tartu Health Care College physiotherapy education according to increase the occupational health education of the future dentists is warmly suggested.

### Teaching staff

#### Standards

- ✓ There is teaching staff with adequate qualifications to achieve the objectives and planned learning outcomes of the study programme, and to ensure quality and sustainability of the teaching and learning.
- ✓ Overall student assessment on teaching skills of the teaching staff is positive.
- ✓ The teaching staff collaborate in the fields of teaching and research within the higher education institution and with partners outside of the higher education institution (practitioners in their fields, employers, and staff members at other Estonian or foreign higher education institutions).
- ✓ Recognised foreign and visiting members of the teaching staff and practitioners participate in teaching the study programme.
- ✓ The teaching staff is routinely engaged in professional and teaching-skills development.
- ✓ Assessment of the work by members of the teaching staff (including staff evaluation) takes into account the quality of their teaching as well as of their research, development and creative work, including development of their teaching skills, and their international mobility.

#### Evidence and Analysis

Teaching staff has good qualifications for respective disciplines, and student feedback on teaching skills is, overall, positive. The number of teaching staff was reported to be sufficient. Clinical teachers are very enthusiastic and committed. Work environment is supportive and encouraging. A good example of the collaboration between teachers in academic affairs is one teachers' activity to encourage two other colleagues to use an opportunity for international mobility and give lectures in Vietnam during her own project. Increasing the teacher exchange would improve also the rotation in the teaching staff, which was reported to stay rather permanently in their positions in the discipline.

Teachers are provided with complimentary self-improvement courses in pedagogy. It is compulsory for teachers to participate in a course at least once a year. Teachers reported to the evaluation panel

to be more active to participate in courses in Estonia than abroad. Some of the teachers are writing books and also translating professional literature in Estonian language.

All clinical teachers work part-time in some clinics, otherwise they would lose their certificate. That could indicate a too high workload, although such issue was not presented to the panel.

The PMs are concerned with the low number of PhD students and the limited number of research in dentistry published by the members of the institute in international, peer-reviewed journals. To ensure the highest quality, continuity and future development of the dental education, not only in perspective of dental treatment protocols technically, the teachers should be encouraged and motivated to get involved in some research activity continuously. This is a responsibility of the Senior Management of the Institute of Dentistry.

### Strengths

- Very motivated, strongly committed and enthusiastic clinical teachers with excellent knowledge of each discipline of Dentistry. The staff also indicated to the evaluation panel a strong intent for constant professional development based on the voluntary methodological interventions offered by the UT.
- Academic staff appears to have caring and supportive relations to co-workers. They support and motivate each other.
- There is a well-established mentoring system for teachers. The teachers are active users of the provided IT support and courses to develop their skills in digital teaching.

### Areas of concern and recommendations

- The evaluation panel is concerned about the low number of international peer-reviewed publications by the teachers, indicating lack of resources and/or interest in research. To follow the official main core values of the UT, the institution should actively promote the research and international connections for implementing the evidence-based dental education.
- To ensure the most recent and updated contents of education material, the teachers own research activities should be more supported by the institution.

### Suggestions for further improvement

- The evaluation panel brings forward a serious concern regarding the future of the programme in case of continuing scientific and educational isolation of the Institute of Dentistry in Tartu from the international scientific and educational communities.
- The PMs suggest the teachers to increase their activity in pedagogical studies and to attend more in international congresses on dental and health professions education.
- Evidently, the rotation in teaching staff is very low, leading to challenges in improvement needed for development of teaching and the teaching methods. It is recommended that the Institute increase the annual number of foreign visiting lecturers for the subject-specific courses. Simultaneously increasing the teacher's exchange could help to motivate and improve the continuous development of DSP.

- The administration of the Institute should carefully monitor the workload of teachers due to their additional activities in external clinical work.
- The evaluation panel suggests the Institute to increase the number of PhD students (e.g. by the appropriate promotion of PhD studies in Dentistry), which is needed to ensure the continuity of academically orientated and competent teaching staff in the future.

## Students

### Standards

- ✓ Student places are filled with motivated and capable students.
- ✓ The dropout rate is low; the proportion of students graduating within the standard period of study is large.
- ✓ Students are motivated to learn and their satisfaction with the content, form and methods of their studies is high.
- ✓ As part of their studies, students attend other Estonian and/or foreign higher education institutions as visiting or international students.
- ✓ Employment rate of alumni is high.
- ✓ Alumni and their employers are pleased with their professional preparation and social competencies.

### Evidence and Analyses

As mentioned in the previous evaluation report, students are obviously very motivated, enthusiastic and hardworking. Students reported becoming even more inspired due to the recent developments of the curriculum. The new curriculum already involves specialty specific subjects in the first semester of studies.

The employers and other stakeholders are satisfied with the graduates in the general. Employment rate among dental graduates is high.

The problem of limited experience in prosthodontics is still relevant and it is caused by the high cost of prosthetic treatment. Therefore, patients are not willing to let inexperienced students perform the procedures. Due to students' lack of experience, the procedures done in the dental outpatient teaching clinic are also more time consuming compared to same procedure carried out by graduates.

Students are satisfied with the quality of universities counselling services but there is not enough staff in the counselling services to reach the needs of students. The tutoring system where the first-year students have tutorial support provided by the more advanced students was also positively commended by students. This helps them to adapt to the complexities of the university life. Students appreciate that their studies are provided with no tuition fees.

They respect their teaching staff and have good cooperation with clinical teachers. Students find that the e-learning platform is very practical and useful. They are especially enthusiastic about video lectures, e-books and self-reflection opportunities.



Among dental students there are some native speakers of Russian language, having poor Estonian language skills. The university has tried to solve this matter by adding an academic test to admission requirements. After the change in admission requirements the situation has improved, but the issue is still relevant as academic test rather shows overall IQ level and not language skills.

Students are not eager to use the opportunity to study abroad. Based on discussions with students they prefer short-term mobility in order to do practical work abroad. Students mentioned that there are not enough scholarships available for their exchange projects and they independently seek for financial support, e.g. from the private sector.

### Strengths

- The implemented personal student portfolio has remarkable impact on evaluation of competence based progress in studies and enables better opportunities for graduates to stand out to possible employers.
- The e-learning opportunities in the faculty are excellent; students have more flexibility in time management and improved opportunities to pace the studies individually.
- Students reported to feel that their voice in the Faculty is heard. Students do have representatives in all levels of administrative committees and study development groups.

### Areas of concern and recommendations

- The evaluation panel raises a major concern regarding the equal study opportunities of Russian speaking students in the Faculty. Following the previous evaluation, the panel continues to recommend the Institute of Dentistry to improve the possibilities for Russian-speaking students to get more support with studies in the Estonian language.
- As recognized and reported internationally, the studies of dentistry are among the most challenging. The evaluation team strongly recommends the Faculty to increase the number of the employed psychologists to enhance the availability of therapy service and to prevent the dropout due to the problems with the mental well-being.

### Suggestions for further improvement

- It is suggested to arrange more short term exchange projects for students to visit other universities internationally. Evidently, there is a need for more collaboration between students and universities international relations coordinators/officers to find opportunities for increasing the student mobility.
- The teaching staff of the institute should have a proper control over the working load of the dental students, especially as they reported significant working hours weekly aside of their studies. This is due to the lack of scholarships and stipends available for students in financially compromised situations.

## 6. Study Programme in Pharmacy

### Study programme and study programme development

#### Standards

- ✓ The launch or development of the study programme is based on the Standard of Higher Education and other legislation, development plans, analyses (including labour market and feasibility analyses), and professional standards; and the best quality is being sought.
- ✓ The structure and content of modules and courses in a study programme support achievement of the objectives and designed learning outcomes of the study programme.
- ✓ Different parts of the study programme form a coherent whole.
- ✓ The study programme includes practical training, the content and scope of which are based on the planned learning outcomes of the study programme.
- ✓ The study programme development takes into account feedback from students, employers, alumni and other stakeholders.

#### Evidence and Analyses

As a small unit, staff members and students of Pharmacy Institute form a coherent entity with high internal commitment and collaboration. More widespread community and higher collaboration and integration with, at least, medical and dental staff and students would inevitably give new ideas and forms of teaching, education, research and societal interactions. Since the previous evaluation, the Estonian Qualifications Authority has published a standard of pharmacist work including the general knowledge, attitudes and competencies of the profession. This indicates the directions for the curriculum development for the PhSP.

After the lengthy preparations, the Institute of Pharmacy launched a new pharmacy curriculum starting in the academic year 2019/2020. Pharmacy Study Programme (PhSP) puts strong emphasis and joint efforts on the teachers' community in order to respond and develop pharmacy education and training according to the suggestions by the previous evaluation panel in 2014. The study programme development has taken into account the feedback from the students, employers, alumni and other stakeholders.

Since the previous evaluation, there is a clear shift towards aligning the expected learning outcomes with the course contents, teaching methods and assessment. More emphasis based on the previous evaluation and current societal needs has been put on the development of clinical pharmacy subject (up to a specialization studies level), e-learning technologies (especially the Moodle environment, video-clips and video lectures), and involvement of transferrable skills in education and training, e.g.: communication skills, ethics, problem-solving skills and developing and strengthening of the

pharmacists' professional identity. Limited number of OSCEs assessments has been included in social pharmacy education.

The new curriculum was implemented and initialized in 2019, to be further launched step-by-step in the coming years. The study programme includes 6 months of practical training, the content and scope of which are based on the planned learning outcomes of the study programme. A six-month training is part of the European Commission requirements in pharmacy degree education. Contents wise, the extent of chemistry and pharmaceutical chemistry courses have been adjusted (reduced) in the new curriculum, but only to a level that still allows high quality skills and understanding to be reached. Increased amount of clinical pharmacy education responds to the requests by the Estonian society, indicating that the further development of the clinical pharmacy study path/specialisation is important for the future pharmaceutical healthcare specialists. As in the past, the elements of the crucially important interprofessional education within the UT study programmes are still scarce and sporadic, which warrants for corrective developmental measures and joint efforts in the future.

### Strengths

- Community pharmacy and hospital pharmacy managers and other external stakeholders have praised the high quality of recently graduated pharmacy students that are ready for professional tasks immediately after graduation.
- High labour-market potential of future pharmacists as healthcare professionals, including entrepreneurial positions in community pharmacies.

### Areas of concern and recommendations

- While the positive changes listed above following the previous PhSP evaluation are clearly visible, the pace of educational change, especially towards the interprofessional education within the UT should be carefully monitored. Here, collaboration across all the three study programmes is pivotal.
- It is crucial that the evaluation and follow-up of the new curriculum is performed in a comprehensive manner, especially towards the constructive alignment, development of the students' transferrable skills, and constructive alignment of modern assessment standards for the measurement of students' progress.
- The contemporary career paths for pharmacists, especially in clinical pharmacy roles are not fully communicated and understood by the Estonian society. Therefore, the voice of pharmaceutical and medical academic communities could be stronger when societal discussions concern the future status and development of pharmacy profession in Estonia – the strong status of pharmacists as professional entrepreneurs and health service providers should be emphasised.

### Suggestions for further improvement

- The truly integrative and interdisciplinary approach to the new curriculum is still missing, and that should be built up together with the medical and dental study programmes.

- The content and organisation of PhSP study courses could be further developed towards the pharmacy graduates working as health care professionals and entrepreneurs. This should be clearly reflected in the learning outcomes.

## Resources

### Standards

- ✓ Resources (teaching and learning environments, teaching materials, teaching aids and equipment, premises, financial resources) support the achievement of objectives in the study programme.
- ✓ There is a sufficient supply of textbooks and other teaching aids and they are available.
- ✓ Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).
- ✓ Resource development is sustainable.

### Evidence and Analyses

Study materials and space resources (teaching and learning environments, teaching materials, teaching aids and equipment, premises, financial resources) of PhSP do support the achievement of current study objectives of the study programme. For example, there is a sufficient supply of textbooks and adequate and well equipped laboratory and library premises. Teaching load of pharmacy staff (and learning load of pharmacy students; contact teaching and learning hours, course contents) are at a rather high level in international comparison. Many teachers (and students) spend a lot of study hours (theoretical and practical) to reach the study credits needed for a degree. High quality of learning activities seems to compensate, at least mentally, the sometimes exhaustive working hours, based on the opinions of the pharmacy teachers and pharmacy students alike. High quality of knowledge and skills achieved was appreciated also by the external stakeholders.

Recruitment of permanent staff and even PhD students requests the PhSP for long-term planning and budgeting. The overall size of the personnel and the total budget of the PhSP are rather limited in international comparison. However, as the number of students present in the Institute is also limited, the monetary or materials/space resources are not the rate limiting steps of the curriculum development – these depend more on the staff, students and the collaboration potential.

### Strengths

- Modern, spacious teaching facilities incl. library and laboratory facilities and equipment.
- Enthusiastic staff members and students.

### Area of concern and recommendations

- Limited resources for permanent staff and PhD student recruitments and updates of first-rate equipment for teaching and research purposes should be discussed and agreed upon within the Medicine Study Programmes of the UT. For example, that PhSP gets a new PhD student occasionally, not necessarily every year. This is a limiting factor for teaching resources alike.

### Suggestion for further improvement

- Using of core laboratories in Tartu University should be increased not only for research, but also for education including the interprofessional courses.

## Teaching and learning

### Standards

- ✓ The process of teaching and learning supports learners' individual and social development.
- ✓ The process of teaching and learning is flexible, takes into account the specifics of the form of study and facilitates the achievement of planned learning outcomes.
- ✓ Teaching methods and tools used in teaching are modern, effective and support the development of digital culture.
- ✓ Practical and theoretical studies are interconnected.
- ✓ The organisation and the content of practical training support achievement of planned learning outcomes and meet the needs of the stakeholders.
- ✓ The process of teaching and learning supports learning mobility.
- ✓ Assessment of learning outcomes is appropriate, transparent and objective, and supports the development of learners.

### Evidence and Analyses

The process of teaching and learning should support the development of individual and social needs as well. The process of teaching and learning in PhSP requests for flexibility and takes into account the study forms and facilitates the achievement of planned learning outcomes (constructive alignment). Teaching methods and tools used in PhSP are up-to-date and support the development of digital culture. Practical and theoretical studies are attempted to be interconnected and utilized in the 6-month practice period in community pharmacies. Overall, the learning outcomes are planned and agreed to meet the needs of the external stakeholders. The process of teaching and learning is planned in order to increasingly support e-learning. Assessment of learning outcomes is planned to support the development of learners.

### Strengths

- New curriculum initiated recently with clear constructive alignment of goals, methods and assessment.
- Integration of practical training and theoretical studies correlate well with societal needs, at least in community and hospital pharmacies.

### Areas of concern and recommendations

- The corrective measures for individual and joint teaching skills, methods, student evaluation strategies etc. should be evaluated and implemented quickly and effectively (as indicated and requested by the students and teachers alike).
- OSCEs development should be a long-term continuous task with constant follow-up.

### Suggestions for further improvement

- Full utilisation of e-learning possibilities. Students are often more skilful and open for new technologies than teachers.

## Teaching staff

### Standards

- ✓ There is teaching staff with adequate qualifications to achieve the objectives and planned learning outcomes of the study programme, and to ensure quality and sustainability of the teaching and learning.
- ✓ Overall student assessment on teaching skills of the teaching staff is positive.
- ✓ The teaching staff collaborate in the fields of teaching and research within the higher education institution and with partners outside of the higher education institution (practitioners in their fields, employers, and staff members at other Estonian or foreign higher education institutions).
- ✓ Recognised foreign and visiting members of the teaching staff and practitioners participate in teaching the study programme.
- ✓ The teaching staff is routinely engaged in professional and teaching-skills development.
- ✓ Assessment of the work by members of the teaching staff (including staff evaluation) takes into account the quality of their teaching as well as of their research, development and creative work, including development of their teaching skills, and their international mobility.

### Evidence and Analyses

Professional competences of PhSP teaching personnel are based on high school education, University education (MSc, PhD), and pedagogic studies, if any. Recently there has been an increased number of pedagogic development opportunities for the staff, including teaching skills courses. Research activity and staff mobility opportunities in PhSP are somewhat dependent on the teaching position at hand. In general, the teaching load is rather high, as mentioned before. One helping factor for teaching load could be the inclusion/participation of foreign teaching staff and visiting international scholars. There is a Finnish professor and an American fellow professor in the staff, but more widespread utilization of foreign teachers and English-speaking courses would be helpful in the long run, not only for research development, but also for teaching development. International teacher/researchers' networks like Nordic POP (Patient Oriented Products) and other industry oriented networks might help in these activities.

### Strength

- Professional competency and commitment of Pharmacy Institute teachers is high. One clear indication of this conclusion was seen during the site visit, when the leader of Pharmacy Curriculum, Daisy Volmer, was nominated as a teacher of the year in 2019 at the University of Tartu - this honour was mainly based on student feedback.

### Area of concern and recommendations

- More international visiting teachers and scientists should be invited to Tartu for shorter- or longer-term - visits, especially in the area of pharmaceutical industry topics, which are mostly absent from the current curriculum.

### Suggestions for further improvement

- Volumes of teaching and working load of individual teachers (and students) should be on a sustainable level.
- As stated in the PhSP self-evaluation report, gradual increase and implementation of study courses in English is an important goal.

## Students

### Standards

- ✓ Student places are filled with motivated and capable students.
- ✓ The dropout rate is low; the proportion of students graduating within the standard period of study is large.
- ✓ Students are motivated to learn and their satisfaction with the content, form and methods of their studies is high.

- ✓ As part of their studies, students attend other Estonian and/or foreign higher education institutions as visiting or international students.
- ✓ Employment rate of alumni is high.
- ✓ Alumni and their employers are pleased with their professional preparation and social competencies.

### Evidence and Analyses

A major problem with the UT PhSP is the low number of qualified high-school graduates applying to start pharmacy studies. This low interest in combination with a high number of students drop-outs (e.g. some students discontinue in order to study medicine or other fields) indicates the need for implementing active preventive measures. The somewhat overloaded curriculum and the strictly scheduled (non-adaptive) programme may also lead to study interruption, and often make students' international exchange (e.g. Erasmus+) difficult or impossible.

There is a lack of pharmacists in Estonia and at least the community pharmacy and hospital pharmacy management personnel praise the high quality of graduated pharmacy students that are ready for professional tasks immediately after graduation. Therefore, the entire profession should promote the study programme not only to Estonian society in general, but especially, to Estonian high-school students.

Hopefully, more clarity and longer-term agreements on the Estonian legislation and roles of community pharmacies and pharmacists as health care professionals will be reached in spring 2020. This way the motivation for pharmacy studies could probably be increased. Moreover, if pharmacy ownership would be linked to the MSc in pharmacy degree, there might be a higher interest of high-school students to apply for the pharmacy programme. A strong aspect of pharmacy studies, which is lacking in medical and dentistry studies, is a large research project at the end of studies. This gives the pharmacy students a good understanding of the principles of practical and theoretical scientific work, providing boost for potential doctoral studies.

### Strengths

- High quality of newly recruited students and of graduates (although of limited number).
- Research project at the end of studies, which gives the students a good understanding of the principles of practical and theoretical scientific work and a potential boost for PhD studies.

### Areas of concern and recommendations

- Active measures are needed for increasing the recruitment of high quality high-school graduates into the Pharmacy programme.
- Active measures are needed to reduce the number of dropouts from the Pharmacy programme in order to provide more professional pharmacists for the needs of Estonian society and world-wide.



### Suggestion for further improvement

- There could be an increase in English study courses and exchange studies. For example, Erasmus+ exchange-visits are highly recommended.

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## 7. Study Programme in Medicine

### Study programme and study programme development

#### Standards

- ✓ The launch or development of the study programme is based on the Standard of Higher Education and other legislation, development plans, analyses (including labour market and feasibility analyses), and professional standards; and the best quality is being sought.
- ✓ The structure and content of modules and courses in a study programme support achievement of the objectives and designed learning outcomes of the study programme.
- ✓ Different parts of the study programme form a coherent whole.
- ✓ The study programme includes practical training, the content and scope of which are based on the planned learning outcomes of the study programme.
- ✓ The study programme development takes into account feedback from students, employers, alumni and other stakeholders.

#### Evidence and Analyses

The PMs acknowledge the complexities of implementing change in the already well-established programmes, especially in case of the relatively large students' cohort (if compared to dentistry and pharmacy). Particularly, replacing the traditional, subject-based courses with the integrated curriculum requires choosing the appropriate strategies and addressing the possible obstacles. The PMs clearly see multiple examples of the MSP curriculum development since the last evaluation including the implementation of the clinical practice in the sixth year and incorporating new subjects such as "Research Work for Students", communication skills or "Basics of Geriatric Medicine" etc. The process of further developing the traditional curriculum towards to an integrated curriculum is indeed challenging and can only be successful if all its stakeholders (teachers, administration and students) understand its aims and positive outcomes and develop the ownership of the change process.

#### Strengths

- Joint forces of enthusiastic teachers and students may form the great allies of the further change process.

- Implementation of the 6<sup>th</sup> year practical teaching indicates the direction for modification for the earlier years of the programme.

#### Areas of concern and recommendations

- The panel sees the need to increase the pace of curricular change and to properly address and support those not understanding the need for change, hence resisting to actively participate in the change process.

#### Resources

##### Standards

- ✓ Resources (teaching and learning environments, teaching materials, teaching aids and equipment, premises, financial resources) support the achievement of objectives in the study programme.
- ✓ There is a sufficient supply of textbooks and other teaching aids and they are available.
- ✓ Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).
- ✓ Resource development is sustainable.

#### Evidence and Analyses

The panel is impressed with the buildings, facilities, the (renovated and extended) University Hospital providing opportunities for close cooperation in the area of interprofessional education. Their condition is very good, and they are under continuous development. The University Hospital is equipped with a large number of study rooms for students and working rooms used by the teaching staff. In addition, according to the recommendation of the past evaluation, a larger, centralised and therefore more effective clinical skills facility is under construction.

The PMs were ensured that all the Faculty of Medicine rooms have wireless internet access. Electronic medical history, together with the Estonian medical images database is used in teaching students. Staff and students have access to the available state-of-the-art databases of the University of Tartu Library.

Students acknowledge the introduction of Moodle platform and Amboss medical study resource for the 6<sup>th</sup> year of the medical students, digital pathology etc. Consequently, there is a need to review how distance and blended-learning resources can be used across the whole curriculum, as it may be possible to use the state-of-the-art learning and assessment software for creating a more effective learning environment.

### Strengths

- Facilities at the Medical Faculty.
- Buildings, facilities and the University Hospital.
- The centralised clinical skills centre at the University Hospital (is just before opening).
- Introduction of Moodle for the whole study period and Amboss for the 6th year.

### Area of concern and recommendations

- Some of the modern teaching materials have been already introduced. Now, a constant cycle of evaluation of the achievements and the faculty strategy for using distance and blended-learning resources across the whole curriculum followed by the change implementation cycle is needed.

### Suggestions for further improvement

- Extend Amboss for the 4<sup>th</sup> and 5<sup>th</sup> year in Medicine.
- Introduce new and constantly update the existing e-learning resources (e.g.: the educational 3D medical apps).

## Teaching and learning

### Standards

- ✓ The process of teaching and learning supports learners' individual and social development.
- ✓ The process of teaching and learning is flexible, takes into account the specifics of the form of study and facilitates the achievement of planned learning outcomes.
- ✓ Teaching methods and tools used in teaching are modern, effective and support the development of digital culture.
- ✓ Practical and theoretical studies are interconnected.
- ✓ The organisation and the content of practical training support achievement of planned learning outcomes and meet the needs of the stakeholders.
- ✓ The process of teaching and learning supports learning mobility.
- ✓ Assessment of learning outcomes is appropriate, transparent and objective, and supports the development of learners.

### Evidence and Analyses

The panel understood that substantial changes such as moving from a fixed course-based curriculum to a modular curriculum require appropriate time. However, the implementation of a holistic view in the curriculum should be a driving force during the next years in order to provide the state-of-the-art education. More importantly, irrespectively of the teaching system (course-based, modular or fully

integrated, etc.) the faculty has to place its focus on implementation of the different practical clinical competence levels throughout the medicine curriculum. In the lack of the national catalogue of educational outcomes for medical programmes, developing such a detailed document locally is necessary to further implement the constructive alignment of teaching, learning and assessment together with the constantly ongoing evaluation / educational change strategies cycle.

This document should include the transparent definitions and list of the practical skills / practical learning outcomes positioning them in the curriculum at least at three levels: before starting the practical courses (and seeing patients for the first time), before entering into the 6th (practical) year and at the time of graduation. Monitoring that the teaching staff use the teaching and assessment methods of objectives and planned learning outcomes of the study programme and subjects as well the assessment of transferable skills are obligatory.

The leadership of the MSP is aware of lack of subjects and methods related to applying digital skills for future doctors in the current curriculum. The panel strongly encourages the leaders to implement the action plan to this need as indicated in the SER (p.32.) The first step to offer research skills to the students was already made as the new module “Research Work for Students” has been recently introduced. Although this module might require additional resources, the panel emphasize its special relevance for the state-of-the art education of future doctors.

The panel was informed by interviewees that some graduates will work with patients having poor to non-Estonian language skills after graduation. Taking into account the fundamental importance of patient safety the appropriate (e.g. elective) courses should be implemented in order to prepare the graduates and thus support the supply of the demand of these regions. The faculty could respond to this challenge through the use of Moodle-based foreign language courses, internship placements, content and language integration learning together with other measures.

The panel saw that the students are motivated to learn and they contribute to improving the quality of their studies by providing feedback on both the learning process and the organisation of studies as tangible evidence of the feedback loop being closed with changes initiated. However, students’ feedback on practical skills and expectation in various subjects indicates the need for further improvement from the leadership and the teachers.

### Strengths

- There is an action plan for the development of the medical curriculum (SER: p. 32, paragraph 4.2.3.).
- There is a formal and informal student feedback system for developing the curriculum.

### Areas of concern and recommendations

- Define the different practical clinical competence levels throughout the medicine curriculum such as:
  - i) level before starting the practical courses (at this stage the students have gained skills using simulation, models and applying role-models),

ii) level before starting the clinical practical year (6th year),

iii) level at the time of graduation.

- Develop the assessments of transferable skills.
- Implement and further develop the action plan related to methods and tools supporting the development of digital culture of the students as well as the faculty.
- The timeline for development and implementation of the integrated curriculum should be developed as the starting point for the effective curriculum change.

#### Suggestions for further improvement

- Special attention should be focused on providing the graduates with the communication skills related to the all, diverse populations of patients.
- While there is a formal and informal student feedback system for developing the curriculum, special attention has to be given to responding to feedback related to practical skills and achieving learning outcomes (SER: p. 35.)
- Vertical integration of the module “Research Work for Students” and perhaps implementing a diploma work or annual presentation of the results by students to the faculty would improve sustainability of research skills of the students Provide students with more opportunities to develop their research skills.

#### Teaching staff

##### Standards

- ✓ There is teaching staff with adequate qualifications to achieve the objectives and planned learning outcomes of the study programme, and to ensure quality and sustainability of the teaching and learning.
- ✓ Overall student assessment on teaching skills of the teaching staff is positive.
- ✓ The teaching staff collaborate in the fields of teaching and research within the higher education institution and with partners outside of the higher education institution (practitioners in their fields, employers, and staff members at other Estonian or foreign higher education institutions).
- ✓ Recognised foreign and visiting members of the teaching staff and practitioners participate in teaching the study programme.
- ✓ The teaching staff is routinely engaged in professional and teaching-skills development.
- ✓ Assessment of the work by members of the teaching staff (including staff evaluation) takes into account the quality of their teaching as well as of their research, development and creative work, including development of their teaching skills, and their international mobility.

### Evidence and Analyses

All the staff the panel met, academic, clinical and administrative, were motivated and committed to their roles. Overall, there seemed to be adequate teaching staff. In the MSP, the teaching staff is either employed at the non-clinical institutes or works primary as a physician, mainly at the University Hospital. The contract of the latter also includes teaching.

The PMs were informed that the increasing number of the teaching and research staff of the faculty have obtained part of their education at a foreign university or their scientific work has been supervised by professors of other universities. The Faculty seems to have teaching staff engaged in research work covering the topics taught by them.

The panel was informed that the University had developed a range of training for teachers but at the moment this training is obligatory only to the recently employed staff members. Significant part of the staff of the faculty is, accordingly, not routinely engaged in professional and teaching-skills development. Furthermore, teaching activities seem to be not sufficiently recognised for the academic development and promotion. Modern teaching and learning methods have been partly implemented but they definitely need to be further developed including both the teaching and assessment of practical and clinical skills. It is desirable to aim at the teaching and administrative staff receiving the formal education e.g. certificate, diploma and master's in medical education.

### Strengths

- Motivated and committed teaching staff.
- Adequate number of teaching staff.
- Some staff is experienced in modern teaching methods and regularly visits international conferences on this topic.

### Area of concern and recommendations

- As significant part of the staff is not routinely engaged in professional and teaching-skills development, regular training of teachers, especially for hospital-based clinical teachers in these skills is highly recommended.

### Students

#### Standards

- ✓ Student places are filled with motivated and capable students.
- ✓ The dropout rate is low; the proportion of students graduating within the standard period of study is large.
- ✓ Students are motivated to learn and their satisfaction with the content, form and methods of their studies is high.

- ✓ As part of their studies, students attend other Estonian and/or foreign higher education institutions as visiting or international students.
- ✓ Employment rate of alumni is high.
- ✓ Alumni and their employers are pleased with their professional preparation and social competencies.

### Evidence and Analyses

As already indicated above, the students' satisfaction with the teaching and learning methods and the MSP content, especially with practical training is unfortunately still poor. As also recommended in the past assessment, the University should further improve the teaching and verification of the practical skills.

Many students have to undertake paid work to support themselves through their studies, putting an additional workload on them and thus, will increase mid-term the educational gap between wealthy and poor in the society. The panel recommends the leadership of the university to increase the awareness of the government leading to establishing significant financial support to the well-performing and underprivileged students.

The dropout rate remains significantly high (20-30%) in Medicine during the last years. In contrast, it is constantly significantly lower (< 10%) in the Medicine in English programme. The panel suggests a systematic evaluation of the reasons both of the high dropout rates for the Medicine in Estonian and of the reasons behind the differences between the Estonian and English programmes. This should be followed by elaboration and implementation of an action plan for reducing this problem.

A large proportion of graduated from the Medicine wants to start their residency training in Tartu and Tallinn and the employment rate is high. The panel has identified from the interview with the stakeholders that there is a need for physician outside of the two large cities (e.g. southern part of Estonia), thus the panel encourages the University to implement an action plan in order to improve the attractiveness of the hospitals across the country and monitor the outcomes.

The panel was pleased to hear, that there is a system of counselling medical students. However, the panel has also recognised from both sides (students and administration) the need for the extension of the support on mental well-being, including increasing the human resources. The panel could not detect formalised structures for students' special needs such as different capabilities, different levels of academic preparation, or special needs due to physical disabilities, etc.

There seems to be a well-accepted international student mobility of Estonian students to Finland, perhaps due to the attractive conditions provided by the host institution (significant direct payment of the students) and due to the geographic location. However, this system might also support brain drain. Further support to use the institutional exchange programmes from the EU and to promote students' mobility to the other EU countries might counteract with this problem and enhance the international experience of the students at the same time.

### Strengths

- Curriculum development takes the views of the principal stakeholders, including students into account.
- High employment rate of the students graduated from Medicine.
- Organised student feedback system.

### Area of concern and recommendations

- Admission to the programmes is still based on the results of state examinations. The University is encouraged to develop the current admission process including additional aspects like cognitive and other skills into the admission criteria for the Medicine possibly based on international best practice examples.

### Suggestions for further improvement

- Increase awareness of the government for providing significant financial support to underprivileged students.
- Implement an action plan in order to improve the attractiveness of the hospitals across the country and monitor the outcomes.
- Undertake systematic review of the reasons for dropout rate and elaborate an action plan.
- Foster the use of institutional exchange programmes within the EU.

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## 8. Closing remarks

As it was indicated in the introduction, the goal of this quality assessment of the University of Tartu Medicine SPG is to support the internal evaluation and self-development with the external experts' advice. Moreover, this evaluation should be considered as recommendations with the intention to provide constructive feedback forming the basis upon which improvements in the quality of the programmes may be achieved.

The PMs obviously understand and know from own experience the complexities of implementing the educational change. At the same time the panel role is to identify the existing weaknesses and to indicate the directions for development.

PMs are happy to answer all additional questions and provide advice and support in implementing the recommendations, and in identifying the examples of best practice, and learning resources. The panel is happy to support UT with expertise, including own experience in implementing similar recommendations in the past.