REPORT
of the Expert Panel
on the

RE-ACCREDITATION OF
Faculty of Medicine University of Rijeka

Dates of the site visit:

March 2nd and 3rd 2015

April 2015

Contents

INTRODUCTION

This report on the re-accreditation of the Faculty of Medicine University of Rijeka was written by the Expert Panel appointed by the Agency for Science and Higher Education, on the basis of the Self-Evaluation of the institution and supporting documentation and a visit to the institution.

Re-accreditation procedure performed by the Agency for Science and Higher Education (ASHE), a public body listed in EQAR (European Quality Assurance Register for Higher Education) and ENQA (European Association for Quality Assurance in Higher Education) full member, is obligatory once in five years for all higher education institutions working in the Republic of Croatia, in line with the Act on Quality Assurance in Higher Education.

The Expert Panel is appointed by the ASHE Accreditation Council, an independent expert body, to perform an independent peer-review-based evaluation of the institution and their study programs.

The report contains:

- a brief analysis of the institutional advantages and disadvantages,
- a list of good practices found at the institution,
- recommendations for institutional improvement and measures to be implemented in the following period (and checked within a follow-up procedure), and
- detailed analysis of the compliance to the Standards and Criteria for Re-Accreditation.

The members of the Expert Panel were:

- Professor Jason Schnell, Department of Biochemistry, Oxford University, United Kingdom of Great Britain and Northern Ireland, Chair
- Professor Boros Mihály, Institute of Surgical Research, Faculty of Medicine, University of Szeged, Republic of Hungary
- Professor Göran Dahllöf, Department of Dental Medicine, Karolinska Institutet, Kingdom of Sweden
- Professor Janoš Terzić, Faculty of Medicine University of Split, Republic of Croatia
- Pedro Grilo Diogo, sixth year medical student, Faculty of Medicine, University of Porto, Portuguese Republic

In the analysis of the documentation, site visit and writing of the report the Expert Panel was supported by the ASHE staff:

- Maja Šegvić, coordinator, Agency for Science and Higher Education
- Iva Žabarović, support to the coordinator, Agency for Science and Higher Education
- Lida Lamza, translator, Agency for Science and Higher Education

During the visit to the Institution the Expert Panel held meetings with the representatives of the following groups:

- Management
- Working Group that compiled the Self-Evaluation and representatives of the Quality Assurance Committee
- Students, i.e., a self-selected set of students present at the interview
- Representatives of the Commission for education and Heads of Study Programmes
- Teachers
- Representatives of the Commission for Scientific Research and heads of research projects
- Teaching assistants and junior researchers
- Heads of the Departments

The Expert Panel had a tour of the departments, laboratories, library and IT rooms at the Faculty of Medicine University of Rijeka, where they held a brief question and answer session with the students who were present.
The Expert Panel also had a tour of the Laboratory Mice Breeding and Engineering Centre, Building of Dental Medicine, Clinical Hospital Centre at Sušak, and the Skills Lab where they held a brief conversation with the teachers who were present.

Upon completion of re-accreditation procedure, the Accreditation Council renders its opinion on the basis of the Re-accreditation Report, an Assessment of Quality of the higher education institution and the Report of Fulfilment of Quantitative Criteria which is acquired by the Agency's information system.

Once the Accreditation Council renders its opinion, the Agency issues an Accreditation Recommendation by which the Agency recommends to the Minister of Science, Education and Sports to:

1. **issue a confirmation** to the higher education institution, which confirms that the higher education institution meets the requirements for performing the higher education activities or parts of activities, in case the Accreditation Recommendation is positive,

2. **deny a license** for performing the higher education activities or parts of activities to the higher education institution, in case the Accreditation Recommendation is negative, or

3. **issue a letter of recommendation** for the period up to three (3) years in which period the higher education institution should remove its deficiencies. For the higher education institution the letter of recommendation may include the suspension of student enrolment for the defined period.

The Accreditation Recommendation also includes an Assessment of Quality of the higher education institution as well as recommendations for quality development

Short description of the evaluated institution

NAME OF HIGHER EDUCATION INSTITUTION: Faculty of Medicine, University of Rijeka

ADDRESS: Braće Branchetta 20, 51000 Rijeka

NAME OF THE HEAD OF HIGHER EDUCATION INSTITUTION: Professor Tomislav Rukavina, MD, PhD

ORGANISATIONAL STRUCTURE:
The organisational structure of the Faculty is adapted to the tasks arising from the scientific, educational and professional activity carried out in scientific and educational organisational units, the professional and administrative tasks performed in the Secretariat, and the library activity carried out in the library.
The head of the Faculty is the Dean, who is assisted in his work by Vice Deans and the secretary of the Faculty. The number of Vice Deans and their rights and obligations are prescribed by the Statute of the Faculty. Organisational units of the Faculty are: departments, clinics, clinical institutes, teaching bases, institutes, centres and laboratories. The Faculty of Medicine has 45 departments and 11 institutes.
Teaching bases of the Faculty of Medicine in Rijeka are the following:

- Clinical Hospital Centre (CHC) Rijeka
- Teaching Institute for Public Health of the Primorsko-Goranska County
- Health Centre of the Primorsko-Goranska County
- Orthopaedic Clinic Lovran
- Special Hospital for the Rehabilitation of Heart, Lungs and Rheumatism Thalassotherapia in Opatija
- Polyclinic Medico
- Psychiatric Hospital Rab
- Institute of Emergency Medicine of the Primorsko-Goranska County

LIST OF STUDY PROGRAMMES:

Integrated undergraduate and graduate university studies:

- Integrated undergraduate and graduate university study of Medicine
- Integrated undergraduate and graduate university study of Dental Medicine

Undergraduate university studies:

- Undergraduate university study of Sanitary Engineering

Postgraduate university studies (doctoral studies):

- Postgraduate university study of Biomedicine
- Postgraduate university study of Health and Environmental Engineering

Postgraduate specialist studies:

- Postgraduate specialist study of Internal Medicine
- Postgraduate specialist study of Family Medicine

- Postgraduate specialist study of Biomedicine of Developmental Age
- Postgraduate specialist study of Orthopaedics
- Postgraduate specialist study of Gynaecology and Obstetrics
- Postgraduate specialist study of Psychiatry
- Postgraduate specialist study of Health Promotion and Addiction Prevention
- Postgraduate specialist study of Management in Health Care (without enrolling since 2006/2007)

NUMBER OF STUDENTS: full-time 1432, part-time 111

NUMBER OF TEACHERS: full time: 186, external associates: 51

NUMBER OF SCIENTISTS**:** 273 employees with a PhD, 220 of them elected to teaching-research grades

TOTAL BUDGET (in kunas): 102.884.165

MSES FUNDING (percentage): 75.67 %

OWN FUNDING (percentage): 18.27 %

SHORT DESCRIPTION OF HIGHER EDUCATION INSTITUTION:

The Faculty of Medicine in Rijeka was officially founded on 21 November 1955 on the initiative of health professionals in Rijeka, substantially assisted by the Faculty of Medicine in Zagreb. The Faculty of Medicine in Rijeka, a component of the University of Rijeka, is a public higher education institution that organises and delivers university and professional studies, and develops scientific and professional work in the educational and scientific area of biomedicine and health and in several other scientific and professional areas, prepares students for their professional activities on the basis of scientific knowledge and methods, educates young researchers, participates in the realisation of students' social interest, and promotes international, especially European, cooperation in higher education and research.

CONCLUSIONS OF THE EXPERT PANEL

ADVANTAGES OF THE INSTITUTION

1. High quality staff
2. High quality students
3. Commitment of staff to teaching and research
4. Good learning outcomes at the discipline level
5. Large output of high quality research publications
6. Large number of research grants, including a significant number from international foundations
7. Strong leadership

DISADVANTAGES OF THE INSTITUTION

1. The hospitals where staff are based are independent from the Faculty and therefore from the clinical research and clinical teaching
2. Institution has limited control over staff numbers due to a hiring freeze
3. Students not always given enough incentive to finish courses on time
4. The curriculum, teaching-learning methods and assessment strategies require modernisation at an institutional level
5. There is limited flexibility in re-distributing teaching and research efforts among staff
6. A lack of a detailed scientific strategy

FEATURES OF GOOD PRACTICE

1. Extensive national and international scientific collaborations
2. The institute maintains a high quality scientific research profile
3. Students have meaningful representation in institutional governance
4. The use of the Skills Lab for teaching and assessing

RECOMMENDATIONS FOR IMPROVEMENT

1. Management of the Higher Education Institution and Quality Assurance

- Develop a detailed strategic plan for the Faculty that includes research and teaching goals, staff recruitment strategies, and the financial approaches needed to meet the goals.
- Promote excellence in teaching and research by developing additional mechanisms to recognise and reward the excellent performance of staff.
- Develop mechanisms to safeguard the research time and resources available to postgraduates.

2. Study Programmes

- That a new 'Curriculum Committee' be formed that regularly and systematically monitors study programmes and makes proposals for improvement and innovation.
- Modify or supplement the standard University student survey for detection of Faculty specific issues.
- Implement changes to address the high percentage of students who do not finish the medical study programme on time.
- Ensure the capacity of the healthcare facility for teaching, especially in regards to the ability of the facility to ensure patient safety, privacy, and comfort.
- Develop end learning outcomes that clarify its institutional mission, help superintend curricular monitoring and support an outcome-based evaluation of program effectiveness. This might be inspired by international sets of core outcomes and competencies for undergraduate medical education (for example, CanMEDS Framework, Tuning Project core competences, Tomorrow's Doctors, or The Scottish Doctor).
- Better promote the alignment between learning outcomes and assessment over the full range of learning by using modern assessment methods, especially in healthcare professions education, such as the mini-clinical examination (mini-CEX), objective structured clinical examinations (OSCEs), student portfolios, or workplace-based assessment (WPBA).
- Promote the use of the skills lab for learning and assessment, namely in the areas of medical communication, history taking and physical examination in simulated patients, as well as basic clinical procedures.
- The Expert Panel recognises difficulties in establishing a functional articulation between the Faculty and the teaching healthcare institutions. It is recommended that a Joint Committee with representation from the Faculty and the teaching institutions is formed in order to improve collaboration in the relevant areas of education and research.
- Future plans for increasing the number of admissions and/or study programmes (for example, Medicine in English) must be based on a comprehensive analysis on the Faculty's teaching capacity and adaptability, in order to preserve high quality teaching.

3. Students

- Modify the current admission criteria in order to assess also the cognitive, affective and communication skills of the candidates.
- Ensure that the bureaucratic burden on the student for appeals is not so great as to dissuade students with genuine grievances from using the appeals process.
- Monitor and analyse pass rates for each discipline to enable more targeted, corrective actions to be made in response to unacceptably high or low pass rates.
- Expand the Alumni association's scope of action, including more meaningful projects for Faculty development such as the follow-up of former students to assess program effectiveness and networking with higher education institutions and healthcare facilities.
- Increase promotion of the public image of the Faculty through an improved website and other public relations mechanisms. Ideally, campaigns would highlight some of the achievements of the Faculty's world-renown scientists, scientific discoveries, teachers, students and student activities.
- Continue in efforts to inform student representatives and the student community about changes made in response to student survey results so that thoughtful participation in student surveys is encouraged.

4. Teachers

- Further develop measures to ensure that qualifications for career progression through the different levels (assistant, associate and full professor) promote teaching and scientific excellence.
- Further develop measures to reward teaching and scientific excellence.
- Carefully monitor success rate of PhD students with a new system of follow-up in place.
- The Faculty is strongly recommended to establish a continuing program in medical education for all Faculty members. Participation in such programs and in pedagogical development studies should be requirements for promotion.
- Ensure that all Faculty members have a personal development plan, which is reviewed annually.
- To creatively find ways to make it possible for academic staff to spend time teaching and carrying out research in foreign universities.
- Department heads should be given the possibility to redistribute the balance between teaching and research among different Faculty members, but this should be done in a transparent manner.
- To establish a joint structure between hospital management and Faculty leadership for discussions on how research could be implemented in daily clinical work and how to prioritise regarding research.
- To establish a more quality based evaluation system of both research and teaching.

5. Scientific and Professional Activity

- Develop a detailed strategic research agenda to maintain and build around Faculty priority areas.
- Develop a system for making research staff aware of national and international granting schemes and providing personalised guidance in applying for those schemes.
- Improve the Faculty website and provide a prominent space on the website to highlight recent achievements of the research and teaching staff.
- Implement a systematic approach for evaluating employee contributions in research, teaching, and administrative/committee duties.
- Where possible, the Faculty should engage with industry on potential collaborations and partnerships, and that the full establishment and engagement with TransMedRi be encouraged.

6. International Cooperation and Mobility

- To develop a new website or extend the current website to include all contents in English as well as Croatian.
- To establish conditions that enable 10% or more of the teaching staff to spend at least 6 months abroad within the next five years, and that this mobility be implemented as a prerequisite for advancement in a teacher's career.
- Promote publishing of research in journals with high impact factor from more research groups, in part by increasing the publication impact requirements for career progression.
- Develop programmes to attract foreign teachers, possibly by providing short courses in English and summer schools. These programmes could benefit from existing international scientific collaborations among Faculty researchers.
- Develop a strategic plan for inter-institutional and international collaboration, in part by upgrading existing research group collaborations to institutional collaborations.

7. Resources, Administration, Space, Equipment and Finance

- Improve the infrastructure to enhance the experience of students in the University; for example, chairs and tables could be placed in the lobby of the main building as a cost effective method that converts an underutilised area into additional study space, thereby improving the learning environment as well as providing a greater sense of community.
- Enlarge and modernise the library infrastructure, building on the existing space and materials.
- Make the content of the library more accessible for the students; for example, an *e-learning* approach could be used as a comprehensive tool for study guides and learning materials.
- Modify the existing staff development programs carried out at the Faculty, and introduce a career tracking system that meets the specific needs of non-academic staff.

- Identify research priority areas to stimulate interdisciplinary work that can result in new financing opportunities, for example research centre grants or large programme grants.
- Enter into dialogue with the national government, emphasising that the Faculty have largely maintained academic and scientific standards despite significant public financial cuts, but that the current teaching and research workloads are not sustainable and if unchanged may have significant negative impact in the future.

DETAILED ANALYSIS OF INSTITUTIONAL COMPLIANCE TO THE STANDARDS AND CRITERIA FOR RE-ACCREDITATION

1. Institutional Management and Quality Assurance

1.1. The Faculty have been relying largely on the University strategy, but it was felt that this strategy was too broad to be an effective framework, especially in terms of research. It is desirable to have a codified strategic framework so that long-term decisions such as staff hiring, resource allocation and fundraising can be made in a consistent manner. The Expert Panel felt that a detailed strategic research plan should be developed and that it should include yearly action plans with specific objectives, clear milestones, and conditions and a timeframe to meet those goals.

1.2. The Faculty has a clear organisational structure that largely functions in an efficient manner. The processes are mostly available on the Faculty website and Faculty staff tend to be aware of administrative processes. There is a need for further improvement in some aspects of quality control, such as maintaining the quality and consistency of the curriculum (see section 2.1 below).

1.3. The activities of the Faculty are largely aligned with the goals of the University, however this criterion can only be fully implemented with the development of a research strategy.

1.4. The Faculty study programmes are mostly in line with the University mission, but a detailed Faculty-specific strategy should be developed.

1.5. The Faculty has a good record of collecting student survey data in line with the requirements of the University. Further improvement is possible regarding tailoring those surveys for detection of potential problems specific to the Faculty (see section 2.1 below). Further efforts could be made in engaging with stakeholders from private and public sectors, and civil society organisations. Further expansion of the Alumni MedRI (see also section 3.5) is highly desirable in this regard.

1.6. While student surveys have a high return rate and students feel that their opinions are taken into consideration, additional mechanisms for maintaining alignment of the assessment methods with learning outcomes and ensuring that educational standards are sustained at an internationally respectable level are required (see sections 2.1 and 2.5).

1.7. Faculty research excellence is largely left to the motivation of the individual researcher, and there is a lack of systematic and regular reviews of research outputs. More schemes could be implemented for recognition of research excellence, for example through the Faculty webpage or through some redistribution of teaching or administrative responsibilities (see also section

4.5 below). The Expert Panel also felt that the requirements for graduation with a postgraduate research degree were set too low, but at the same time recognise the difficulty of balancing large teaching loads with research activities. The Expert Panel draws attention to ORPHEUS framework for standards in PhD education in biomedicine and health sciences, which has been proposed by the Association of Medical Schools in Europe and World Federation for Medical Education.

1.8. The Faculty uses the "Code of Ethics of the University of Rijeka", the "Code of Ethics of Teachers, Associates and Researchers of the Faculty of Medicine", and the "Code of Ethics of Students of the Faculty of Medicine". These are available on the University or Faculty websites and Faculty staff are aware of the codes. The Faculty also establishes an "Ethics Committee for Biomedical Research" and an "Ethics Committee for Protection of Academic Integrity, Safeguarding the Dignity and Promoting the Reputation of the University of Rijeka Faculty of Medicine". The Faculty is encouraged to complete the "Code of Ethics of Professional Services of the Faculty of Medicine".

2. Study Programmes

2.1. The Faculty's Quality Assurance system fits into the University of Rijeka's Quality Assurance standards. The Faculty has developed internal quality assurance mechanisms, such as the Quality Assurance and Improvement Committee (QAIC), membership of which includes students. Much of the Committee's work is based on the application and analysis of University-wide student surveys that focus on several aspects of students' perception of their learning environment. The student survey shows high response rates given that it is filled by students in paper at the end of the disciplines and before examinations. These survey data are the main source of recommendations for improvement and implementation of changes to study programmes. The survey is standardised for all the University, which has the advantage of allowing for cross-institutional comparisons, but this reduces the instrument's sensitivity for detection of problems in specific study programmes. Importantly, the Faculty has intentions of developing a specific student survey for assessing other aspects of the learning environment, more specific to healthcare professions.

Quality assurance is also not centralised in one Faculty body but spread out by Department: Department heads provide annual reports that are discussed in the Faculty's Council. The nomination of a Vice-Dean for Quality is a positive indicator of awareness to the necessity of developing a quality assurance culture.

Nevertheless, in spite of the existence of the QAIC, its focus is not on the improvement and innovation of study programmes regarding the curricula, teaching-learning strategies, assessment and learning outcomes, but on the implementation of student surveys' results, improvement of the learning environment as a whole and correction of sporadic student-related issues. Constant and systematic monitoring of the study programmes, including proposals for

innovation, is not undertaken by the Faculty, which can hamper the capacity for effective evaluation of study programmes.

Establishment of a Curriculum Committee would enable continuous monitoring and innovation to the curricula. Specific aspects of curricula to be addressed include the excessive polarisation of the medical curriculum, the lack of integrative learning, the absence of important longitudinal clinical experiences, the development of competences in patient safety and privacy, communication in the clinical context, legislation and medical paperwork, and healthcare systems. Courses on humanism/professionalism that made use of different teaching approaches (in articulation with other higher education institutions of the University) in the early years of the medical study programme could increase student motivation and develop awareness over important attributes such as empathy and continuous self-reflection. Longitudinal clinical attachments (for example, primary care internships in the local community) would allow students to follow-up patients. Legislation and paperwork, healthcare systems and non-formal skills (communication skills, leadership, teamworking and lifelong learning) could be addressed by longitudinal disciplines throughout study programmes. The Curriculum Committee would also facilitate communication with external stakeholders, to the community, and to international peers, which could translate to upgrades on the educational mission that might also be important for Faculty development. Benchmarking is particularly important, and facilitates the search for best practices.

The QAIC should proceed with three initiatives that are stated in the Self-Evaluation report (page 18): (1) survey the final year students about their own acquisition of competences and satisfaction with the study programmes; (2) periodic monitoring of the adequacy of the ECTS allocation in relation to student workload; and (3) pedagogical training programs for teachers. Regarding the first, further follow-up of graduates from all study programmes can detect important adjustments to be made on study programmes, in accordance to job demands in the whole spectrum of knowledge, skills and attitudes.

2.2. Enrolment quotas are approved by the University Senate with regard to the Faculty teaching capacity, labour market analysis and reports from the Croatian Employment Service. The enrolment quotas have not changed in the past five years regarding the undergraduate study programmes. However, it was noted that an analysis of Croatia's provision of healthcare professionals supports an increase on the number of admissions on the study programmes in Medicine. In the current context of high workload of the Faculty's staff, especially, but not limited to, the clinical teachers, together with the impossibility to hire new teaching staff, an increased number of admissions carries a significant risk for reducing the quality of medical education.

2.3. The current enrolment quotas are adjusted to the teaching capacity and availability of learning resources and infrastructures in all study programmes. Good student-tutor ratios are achieved in lectures, seminars and in clinical teaching: for example, regarding Medicine, clinical groups have up to 4-6 students, while regarding Dental Medicine, groups of two students work in each dental unit, which allows for personalised teaching. Although student-tutor ratios may be an indicator of quality in teaching, especially with regard to learning in a clinical

environment, other variables need to be present in order to assure quality, including adequate teaching time, utilisation of efficient teaching methods, and teacher availability outside of the classroom.

Although enrolment quotas seem to be adjusted to the teaching capacity, 53% to 65% of medical students do not graduate on time and a considerable percentage of them do not obtain more than 2/3 of the ECTS on the first year of studies (61% to 81%). These pass rates may indicate a problem with the enrolment process (including numbers) or the curriculum. The Faculty is aware that these numbers are unsatisfactory (page 56 of Self-Evaluation), but the Expert Panel was unable to ascertain in detail what measures are being taken to analyse and correct these pass rates.

2.4. Learning outcomes for all the study programmes comply with the requirements of the EU professional mobility directive, and are defined by the Faculty at a meso level (per discipline) and at a micro level (per lecture/seminar/practical work). These outcomes have been revised during the past years, comply with the Croatian Qualifications Framework (CQF), and correspond to the learning outcomes of comparable higher education institutions.

However, in spite of complying with the CQF, the Faculty does not show adequate end learning outcomes regarding knowledge, skills and attitudes or behaviours that can superintend decisions regarding the curricula. The CQF learning outcomes are a solid guide for higher education institutions but are also too broad and not specific enough for the Faculty's study programmes. The Faculty would benefit from the adoption of international frameworks of learning outcomes, driving a more transparent, solid and effective process of curricula development and monitoring, but also strengthening quality assurance processes in an outcome-based paradigm. The adoption of these frameworks will also inform the students about what is expected of them. Given that an initiative to define common learning outcomes for all the Croatian Medical Faculties is planned, this is the correct timing for adoption of these frameworks (with adjustments for the national context if necessary). The definition of a set of clinical skills that students must master at the end of the study programmes is also necessary.

2.5. Assessment complies with the Regulations on Studies of the University of Rijeka. Students feel that the overall assessment methods are fair, objective and that teachers provide feedback. Students are informed about assessment criteria and final grades are made available quickly. Students have the real possibility to appeal and to consult the correct answers to the exam questions, if necessary.

In-class assessment accounts for 70% of student's final grade on each discipline, and it relies on partial exams, short tests, practical skills or papers and presentations made by students. It is necessary to assure that students are motivated by this continuous assessment system and that teachers provide fair and discriminative (sensitive) in-class assessment (summative assessment), with emphasis on giving feedback (formative assessment), in order to avoid grade inflation. Final examinations account for 30% of the final grades and can be taken as written exams, oral and practical examinations. The majority of disciplines use written and oral final examinations, while clinical disciplines use written, oral and practical exams.

Regarding pass grades, they are set at 40% and 50%, respectively for undergraduate and postgraduate studies. The definition of absolute cut-offs regardless of the exam characteristics and analysis of results is not good assessment practice and should be replaced by models that adjust cut-offs based on the specific exam.

Some students perceived a year-on-year repetition of exam questions. This may show an important bias in the Faculty's assessment strategy, reducing the discriminative power of written examinations, yielding grade inflation and reducing student learning. In an example of a results' analysis sheet of a written exam, the vast majority (~90%) of students answered correctly to the majority of the multiple-choice exam questions, and conversely, a vast majority answered wrongly to a minority of the exam's questions. As a result the dispersion of results was quite low, suggesting that the discriminating power of the exam was low.

Although much work is being conducted regarding the definition of learning outcomes, the Self-Evaluation report is uninformative when discussing future perspectives for developing high-quality assessment methods. Attention must be given also to assuring the alignment of the assessments to the learning outcomes, and developing assessment methods that drive real learning instead of memorisation and that the assessments encompass the full range of learning (including skills). Regarding skills assessment, ideally the Faculty would develop a set of practical procedures that students must master by the end of specific disciplines and at the end of study programmes, and assess them in simulated or real contexts. More generally, additional contemporary teaching methods such as flipped classrooms, problem or case-based learning, and team-based learning in an interprofessional context could be attempted in pilot initiatives. It is noted that the Faculty has an excellent background in developing inter-professional education, namely through team-based learning and shared preclinical classes between students from different study programmes. The Faculty may take advantage of existing pilot initiatives elsewhere to promote development of contemporary assessment methods (for example in healthcare professions education the following should be considered: objective structured clinical examinations (OSCEs), student portfolios, or workplace-based assessment (WPBA)).

The concept of outcome-based education needs to be incorporated into all aspects of the educational process in the Faculty. In the future, a 'Health Professions Education Department' could be an important step towards progressive development of curricula, teaching-learning strategies and assessment methods, and would more generally promote a positive culture with regard to contemporary healthcare professions education.

2.6. The Faculty's study programmes are aligned with the European Credit Transfer and Accumulation System (ECTS). Both the teachers and the students feedback is taken into account in analysing the adequacy of the number of assigned ECTS, and discussions are held in the QAIC and Faculty Council.

The Faculty has discussed the allocation of ECTS in the past years, implementing changes based on student surveys. The Expert Panel perceived no major discrepancies between the number of allocated ECTS and the actual students' workload. Nevertheless, the Self-Evaluation report states (page 58) that it is difficult to develop a systematic mechanism for reviewing the adequacy of the allocated ECTS in the event of important discrepancies between teacher and

student feedback. Effective mechanisms must be developed, such as meetings between student representatives and teachers, in order to cooperate in finding the best solutions.

2.7. The study programmes comply with European regulations, the ECTS system and the Bologna process. They have been revised over recent years with regard to adherence to European norms. Overall, study programmes are based on traditional curriculum structures. The medical curriculum shows polarisation between Bachelor/preclinical and Master/clinical stages of the study programme. Preclinical years focus on biological, chemical and physical basis of life, basic medical subjects, and mechanisms of disease and pharmacology, whereas clinical years approach diseases, their diagnosis, prevention and treatment. In contrast, the dental medicine curriculum shows a less polarised approach, with more patient contact from early years, less basic sciences content and more vocational contents.

The medical curriculum shows no integration by organ systems or medical-surgical integration in the clinical years. The Self-Evaluation document proposes future vertical and horizontal integration (page 20), but the Faculty stakeholders were unaware of any initiatives for these purposes. The Bachelor phase of the medical study programme is organised in semesters, while the Master phase is organised in blocks with concurrent teaching of two or three subjects. The transition from semesters to blocks in clinical teaching has been working from academic year 2008/2009. Teachers believe this overly limits their dedication to clinical teaching and that block teaching does not develop longitudinal clinical experiences of patient care.

Students believe the preclinical years require more effort and working hours, while the clinical years are less demanding. Lack of contact with patients early in the medical study programme may demotivate students and may, in part, explain the low percentages of completion of the medical study programme in six years.

Some curricular changes have been made recently, which have enriched the learning experience of medical students and their preparation for practice, namely the creation of Emergency Medicine disciplines. Elective disciplines exist starting in the first year. The transition from preclinical to clinical years is assured by two Propaedeutic disciplines, which are based on patient contact, history taking, and physical examination. Propaedeutics should take advantage of the skills lab for practice in models before practice of clinical procedures in real patients, thus assuring patient safety.

The Expert Panel notes that despite the desire for significant changes to the curricula, continuous, gradual change of the curricular structures, teaching and assessing are preferred over drastic reforms that could severely compromise the Faculty's normal functioning.

A special remark is necessary regarding medical ethics and ethics in the workplace, which need to be implanted in the minds of student and translated into actions in their future careers. Medical ethics, including patient privacy and autonomy, needs to be included in the curricula, but also reinforced through role-modelling behaviour during clinical teaching.

The Expert Panel also had some concern about the plan to offer the Medicine in English study programme (page 24). It will be necessary to thoroughly analyse teaching capacity, and staff motivation, availability and fluency in English, before such an initiative is taken. Of

particular concern is the possibility of overloading the teaching staff and a concomitant drop in the quality of the teaching.

2.8. All study programmes are implemented in the following forms of teaching: lectures, seminars, exercises and practical work. Lectures make up for 25% of the students' teaching hours in the medical study programme. Emphasis has been put on developing more practical work for students to acquire competences and for preparation for the profession.

Clinical rotations with patient contact in a tutoring system are developed in both medicine and dental medicine study programmes. In medicine, a skills lab has been developed to provide more experience in practical procedures and clinical rotations are carried out in the Emergency ward of Clinical Hospital Center (CHC) Rijeka. In Sanitary Engineering, fieldwork is conducted in food industry factories. Students believe that seminars and practical work are interactive and dynamic, whereas lectures are perceived as less motivating. Students are actively involved in learning through seminar works, exercises and presentations. Different teaching methods have also started to be implemented; namely, simulation in the Skills Lab, e-learning and peer-teaching in clinical disciplines.

Simulation of practical procedures in some disciplines is conducted in the Skills Lab, especially in the fields of first aid, anaesthesiology and emergency medicine. Students learn Basic Life Support according to European Resuscitation Council (ERC) guidelines. The skills lab could be developed further for training medical communication, history taking and physical examination in simulated patients and practicing basic procedures such as venous catheterisation, arterial blood sampling and cardiopulmonary auscultation.

Flipped classrooms, problem or case-based learning and team-based learning in an interprofessional context are not implemented in the Faculty study programmes. Introduction of these learning strategies would foster a student-centred culture that makes students accountable for their own learning process and strengthen their acquisition of knowledge and skills.

Regarding interprofessional education, the Faculty has an excellent background for developing interprofessional learning as one of the top priorities for innovation and internal and external acknowledgement, and the students may benefit from having shared learning environments with other students from medicine, dental medicine and nursing study programmes.

2.9. Relevant and up-to-date papers in healthcare professions and basic life sciences are made available to students. Scientific literature is also available at the Library. Teachers use up-to-date sources of information for preparing teaching materials and students use them to prepare essays and presentations.

2.10. Students have practical learning experiences in all the study programmes, from internships in healthcare facilities to field work in food industry plants. Regarding clinical teaching, students have rotations in small tutored groups, mostly in the CHC Rijeka but also in public health institutes, orthopaedic clinics, a thalassotherapy hospital and a psychiatric hospital.

It is clear in the Self-Evaluation that the Faculty is committed to the creation of a new hospital, which would be functionally integrated into the University, thus incorporating professional, educational and research activities. In the current context, clinical teachers indicate that it is difficult to dedicate the necessary time to their students because of the high workload of their profession and lack of incentives and accommodation for educational roles. Until a new University Hospital is created, both the Faculty and the current teaching health care institutions must create more mechanisms for communicating with each other with the goal of more efficiently integrating professional, educational and research activities. For example, a newly created Joint Committee that superintends decisions about the allocation of teaching hours to healthcare professionals and creates teaching schedules appropriate to the hospital and teachers' dynamics may greatly facilitate both teaching and research quality.

3. Students

3.1. The admission criteria for the University of Rijeka undergraduate study programmes are based on high school grades (25%) and on the grades obtained on the state graduation exam in Biology, Chemistry, Physics and/or Mathematics (75%), depending on the study programme. Postgraduate study programmes also take into account specific high school disciplines. These admission criteria are transparent, properly announced on the Faculty website and in brochures. The criteria include also classifications obtained in a national exam, which helps to reduce the impact of differences among high schools.

The Faculty of Medicine implements a classification threshold for admission (40%) and enrols students with high graduation marks in the state graduation exam in all its study programmes. Students who enrol in the medical study programme obtain the highest marks. The Faculty also monitors the structure of the student cohorts that are admitted in all the study programmes, namely whether they were educated in vocational or grammar schools

Since the introduction of the state graduation exam grade as a criterion for enrolment, pass rates in the first year of the study programmes have increased, which may indicate a better selection process in correlation with student success. Nevertheless, as previously stated, the pass rates on some study programmes, for example in medicine, are still unsatisfactory (61% to 81%). Although this may be a consequence of many factors, it is not possible to exclude an effect from the admission criteria. Using additional admission criteria may result in higher pass rates on the first years of study programmes and lead to a more eclectic student cohort. Enrolment criteria can become more comprehensive by encompassing extracurricular activities (for example, voluntary work, preclinical workshops) and by acknowledging students who show cognitive, affective and communication skills that are suited for the study programmes (this could be assessed by multiple, short interviews). Greater comprehensiveness of admission criteria would also provide a stronger alignment between the characteristics of the enrolled students and the end-learning outcomes of the study programmes.

3.2. The Faculty's students participate in and organise a large and diverse array of extracurriculars with active support from the Faculty management. Individual students,

informal student groups and student associations (FOSS MedRi, CroMSIC, EMSA and CroADS) develop these activities in Faculty facilities. Activities include an international scientific and clinical exchange program organised by the International Federation of Medical Students' Associations (IFMSA), endorsed by the World Federation for Medical Education (WFME), and implemented by CroMSIC with support from each Croatian local student committee. Furthermore, students organise international and regional scientific conferences, support student engagement in education and scientific research and organise public health, humanitarian, cultural and sports activities (pages 80-81 of the Self-Evaluation). The current culture of Faculty support to students and student associations fosters a positive learning environment and strengthens the institution's dynamics.

The Faculty's support to these extracurricular activities seems to be mostly logistical, providing spaces and materials. Financial support may be necessary for the organisation of student activities such as congresses and for allowing student participation in international events, but the process of money allocation to the students' associations must be transparent.

3.3. The University counselling centre provides psychological counselling, legal counselling (also provided by the Faculty itself) and supports students with disabilities. Low-income students can also apply for University grants. The Faculty has a working peer mentorship system for students as well as a teacher-student mentorship system. These mentorship programs offer important advantages for students, with regard to study advice, personal and professional development, as well as career advice. Importantly, these systems must be monitored for their effectiveness and dynamics. In fact, students believe that while the student-student program is functional and translates into an actual benefit for their adaptation to the Faculty, the teacher-student program is not working optimally due to there being too few good mentors available. Both mentorship formats may benefit from developing a training program for mentors and soft skills workshops for students.

3.4. Students are informed in advance (in paper or in the discipline websites) about the assessment methods and the final grade calculations used by each discipline. University regulations apply to student appeals: after publication of exam results, students may write reasoned objections to the exam classifications and submit them to the Dean who assembles a commission to assess appropriate appeals. Written exam classifications are reviewed in those situations, while oral exams are repeated.

Students did not show much motivation to engage in appeals, and the students gave no examples of completed appeals. This may reveal that the classifications are mostly adjusted to their performance but may also show that the appeal procedure is bureaucratic and inefficient, in spite of student reasoned appeals. While the appeal procedures are implemented according to University regulations, in practice they must translate into an effective mechanism that encourages students with genuine cases to appeal. An effective appeals process also places positive pressure on teachers to improve the quality of exam questions. One possible measure to ensure an effective appeals process would be for the appeal to go first to the Head of Departments instead of the Dean of the Faculty.

Regarding pass rates, the QAIC monitors these features in the study programmes as a whole but the Self-Evaluation report does not show pass rates per discipline or per year of each study programme. Disciplines with very high or very low pass rates are also not identified in the report. Knowing that there are low pass rates in some study programmes as a whole and in the first year of those programmes (e.g.: medicine), there are necessarily some disciplines with low pass rates that might require the implementation of corrective measures, considering both the students and the teacher's points of view. Conversely, disciplines with extremely high pass rates must not be forgotten and also analysed in terms of the effectiveness of student acquisition of competences, in spite of reported student and teacher satisfaction with the discipline.

3.5. The Faculty established an Alumni association (Alumni MedRi) in 2007, which has increased significantly in relevance since 2012 as membership has increased and members gain experiences in national and international contexts.

It is important to emphasise the immense potential behind this organisation, which expands beyond lectures and panel discussions: the follow-up of former students offers the possibility to assess program effectiveness in delivering core knowledge and skills for the graduate's professional development, and detecting areas where curricula must be improved. Furthermore, surveys also of the co-workers, employers and even patients of former students offer exciting possibilities for research and continuous quality assurance of study programmes. The establishment of an active group of former students may facilitate networking with several higher education institutions, healthcare facilities, companies and research groups that in turn may translate into Faculty development in research and education. Coordination with the Croatian Employment Service for the systematic analysis of employment statistics and professional achievements of Faculty alumni in Croatia and abroad is encouraged.

3.6. The University and Faculty websites facilitate informing the public about the Institution's history, vision and mission, as well as details of the study programmes (including study conditions, mobility programmes, and student services) and requirements for enrolment. Information regarding employment features and learning outcomes should be expanded and made clearer. The information that is presented is clear but should be made available also in English, which will increase the reputation and attractiveness to potential students and staff. The Faculty could also make use of social networks and work together with secondary schools in the presentation of its study programmes to future applicants as well as in organising, for example, summer schools in science and healthcare-related subjects targeted at secondary school students.

3.7. Students are represented in the Faculty Council (15% of the total number of members), Commission for Education, Commission for Electives, QAIC, and meetings of Year Councils, among other bodies. In the Faculty Council, student representatives have the right to suspensive veto on decisions that affect students, and a regular item in the agenda relates to student questions. Students are actively involved in the implementation of the student surveys, which produce important data that are used for quality assurance and teacher career progression

purposes. Also, informal communication channels are easily established between students, teachers, management and staff.

3.8. Student representatives have contact with the Faculty's management and teachers in various Faculty bodies, where their suggestions are taken into account. Improvements that are based on student suggestions were perceived regarding ECTS allocation, remedial or partial exams, and sporadic issues regarding low teaching quality. The results of student surveys are discussed in the QAIC and reported to the Faculty Council. Measures are taken to address the highlighted problems and students inform their peers about implementations. Importantly, students are motivated to answer the student survey and believe that improvements can be derived from them.

4. Teachers

4.1. Number and qualifications of the scientific-teaching staff are in line with strategic goals of the institution and adequately cover core disciplines. The institution employs a sufficient number of qualified full-time teachers to ensure the quality and continuity of teaching and learning on all study programmes.

4.2. Government restrictions in the establishment of new positions make it difficult to plan for growth and development. Faculty were concerned with more quantitative requirements for promotion and should prefer an evaluation based on educational and scientific quality. Most positions were advertised properly and selection process was transparent. Faculty members had the possibility to participate in international conferences. Planning for future replacement of retiring staff was in place. The Expert Panel was, however, concerned by the limited possibilities to reward teaching and research excellence. Regarding the doctoral program, the Expert Panel was concerned with the low rate of candidates finishing on time. We were informed that a new system of admission and follow-up of candidates was in place.

4.3. The institution takes into account the number of full-time teachers, maintaining the optimal ratio between students and full-time teachers.

4.4. According to the interviews with different groups, the Expert Panel found good examples of teaching practices and the use up-to-date pedagogical methods. On the other hand, we found no evidence of a structured program for medical education. It had existed previously in collaboration with Zagreb University, but was no longer in place. Continuous participation in courses in medical education was not a requirement for promotion, and according to the Self-Evaluation several measures for improvement regarding pedagogical training were planned but not in place.

The Expert Panel was concerned by the lack of flexibility for academic staff with different profile qualities in teaching, research, and clinical work to concentrate on their area of excellence. The teaching requirements were very static and there were few possibilities to, for

example, reduce the teaching load and increase time spent on scientific work. This was particularly alarming for clinician-researchers.

The inflexible system did not allow Faculty the possibility of spending more extended periods on sabbaticals from teaching or, for example, carrying out research in foreign institutions. The Expert Panel did not find evidence of a structured follow-up plan for individual Faculty members.

4.5. The Expert Panel found that academic staff had a high workload; this was particularly true for clinician-researchers. Teaching requirements were distributed according to strict regulations. The Expert Panel was struck by the limited possibilities for department heads to redistribute workload between different Faculty members. Particularly worrying was the fact that clinician-researchers had very limited possibilities to reduce their clinical workload for periods needed to participate in research because of lack of doctors who could replace them. Faculty members participating in teaching were evaluated by their students in a system that was working well. However, we found little evidence of alternative methods for feedback to teachers. The self-evaluation report pointed to plans for more qualitative evaluation of teaching, for example using a peer-review system.

4.6. HEI ensures that teaching and research activities of the employed teaching staff are not affected by their external commitments.

5. Scientific and Professional Activity

5.1. In practice, many of the staff members that the Expert Panel spoke with were aware of the core research areas of the Faculty (viral immunology, pathophysiology, immunological infection disease, tumour molecular biology). However, the Expert Panel felt that a detailed strategic research agenda was necessary for making decisions (for example, hiring and resource allocation) that can maintain and build around these strengths. Establishing priority areas will also enable the Faculty to more widely promote itself in order to recruit world-class staff and collaborators, and secure national and international funds to further support those activities. Mechanisms to monitor, evaluate, and review defined performance indicators, as set out in the research agenda, will also be required.

5.2. Individual members of the Faculty research staff have a large number of high quality national and international collaborations. These appear to be largely "bottom-up" collaborations. There is scope for further facilitation of international collaborations, possibly through upgrading the research group collaborations into institutional collaborations (see related Recommendation under Section 6).

5.3. Many of the Faculty research staff are among the best in the world. However, taking further advantage of this world-class expertise and raising the profile of other researchers in the Faculty is currently limited by large teaching loads that restrict research time and mobility. Expansion of

systems for making research staff aware of granting schemes (national and international) and then providing personalised guidance in applying for those schemes is also encouraged.

5.4. The Faculty has an impressive number of high-quality scientific papers and makes a significant scientific contribution globally in several fields of research. It was noted by the Expert Panel that some of the strongest research comes from the laboratories of Stipan Jonjić, Bojan Polić and Siniša Volarević, among others.

5.5. There is large scope for increasing the number and ways in which the Faculty recognises and encourages employee excellence. One mechanism is to provide a prominent space on the Faculty and Department websites to highlight recent achievements (including, for example, high impact publications, grant awards, teaching awards, patent awards, or community outreach activities). At this point there appears to be no system in the Faculty for evaluating employee contributions in different areas. One possible scheme would be to evaluate the contributions of all academic employees in the following three areas: (1) science/research, (2) teaching, and (3) administration/committee membership. In this way, workloads could be rebalanced or redistributed such that the strengths of individual employees are best utilised.

5.6. Consistently every year members of the Faculty publish a large number of peer-reviewed scientific publications.

5.7. The Faculty has a large number of funded projects from both national as well as international (for example, NIH, HHMI, ERC) granting agencies.

5.8. The Faculty is encouraged to promote the full implementation of TransMedRi and take advantage of the possibilities therein. Especially important is to secure all possible intellectual property; for the possibility of increasing Faculty and University income, but also for increasing the chances that knowledge generated in the Faculty is seen as valuable and therefore translated into actual products by industry. Where possible, the Faculty should engage with industry on potential collaborations and partnerships.

5.9. The Expert Panel was confident that the Faculty largely meets this criterion, but stresses that a focus on decreasing teaching workload, which will increase both teaching and research quality, ought to be a priority should any additional income become available.

5.10. The Expert Panel felt that the burden of teaching was much too high in some of the postgraduate programmes, with the result that the scope for increasing the research quality requirements for graduation was severely limited. Many graduate programs also suffer from poor on-time graduation rates, which may be related to teaching load, but other factors such as availability of suitable mentors and supervisors (and therefore experimental resources) is likely also a factor. On this point, the Expert Panel refers the Faculty to ORPHEUS for guidance (see section 1.7).

6. International Cooperation and Mobility

6.1. Currently, the Faculty of Medicine, University of Rijeka allows students from other Faculties to enter their School. However, most of the student exchange activities are related to short visits (up to one month).

6.2. Study programmes are entirely based within the Faculty, but it is possible to complete part of the study program abroad (mainly through Erasmus program).

6.3. There is a dominant trend for teachers to stay in Rijeka for their entire career and it is not common to spend a significant time abroad. When asked by the Expert Panel how many teachers were abroad for a period of at least six months, very few Faculty members raised their hands (the Self-Evaluation is consistent with this sampling). It seems that the problem lies in a lack of the staff that will take over teaching and administration duties while their colleagues are absent. The general impression that was obtained was that the teachers are willing to spend time abroad but they are not able to because of their responsibilities in the Faculty. Lack of teaching staff may be overcome by sharing, via a rotation, the teaching and administration burden of absent colleagues. It is appreciated that this process is likely to be more easily implemented among teachers of preclinical subjects.

6.4. Scientific achievements of the Faculty are impressive and, scientifically speaking, it is among the best Faculties in Croatia. The quantity and quality of international scientific projects and collaborating institutions are also of a very high standard. One potential concern is that a large percentage of the top quality research arises from a small number of research groups, suggesting disparity.

6.5. Students from abroad visit the Faculty of Medicine largely through student exchange programmes coordinated by the student organisations EMSA and CroMSIC. Although the Faculty accepts applications to the study programmes from foreign students, in reality the teaching of nearly all classes in Croatian greatly limits the number of students coming from abroad. The Faculty is preparing a Medicine in English curriculum, which will clearly be more attractive for foreign students, although this must be balanced against the increased teaching load it will require and the possible implications for teaching quality.

6.6. All vacancies are published on Euraxess, but should be advertised also through Science Careers and NatureJobs. In practice, the number of Faculty currently coming from abroad that have no previous connection to Croatia is extremely small. It might be expected that this largely arises from the requirement for teaching in Croatian. Implementation of this criterion would almost certainly be improved by the introduction of a Medicine in English course.

6.7. There is an extensive list of semi-official contacts and collaborations with over sixty international institutions of various research profiles. There is large scope for increasing the

numbers of inter-institutional cooperations, which might be facilitated by existing research group collaborations.

7. Resources: Administration, Space, Equipment and Finances

7.1. The institution possesses all infrastructure necessary to run the curriculum. The Faculty has well-equipped lecture halls, seminar rooms and laboratories and a general library, but strengths in teaching and learning can be further developed if proper attention is given to some weaknesses. It was noted, for example, that some infrastructures such as the library and other informal learning spaces for students require improvement.

7.2. HEI secures an adequate ratio of teaching and non-teaching staff.

7.3. Non-teaching staff should be included in the personal development plans.

7.4. Laboratory equipment and relevant usage protocols comply with recognized international standards.

7.5. The institution secures modern equipment, technology and technical support for teaching and research activities, which is largely utilized in accordance with the mission.

7.6. The library seems not to be appropriate for the number of students, and investment towards modernisation of the infrastructure appears necessary. It was noted, however, that the Faculty is well aware of this problem. Working spaces for students, including access to electronic databases, are very limited, although certain spaces within the main building of the Faculty appear to be underutilised (for example, the main lobby area).

7.7. The budget preparation and the management of resources are conducted with care, and the budget is balanced. The Expert Panel advises the Faculty to address the issue of the dropout rate because it is fundamental to its educational mission, although the issue is not necessarily related to the funding of the discipline and study programmes. The Faculty are proficient in coping with the decline of state funding, although the heavy teaching loads are not sustainable long-term. Ultimately, personnel planning should shift from the government to the University, and this will require working with the government and other HEI's to bring about this change.

7.8. The team found evidence of strong financial management and a focus on increasing the efficiency of expenditure and attracting new sources of income, which together provides confidence for the future of the institution. The team recommends that the Faculty continue in its determination to ensure that balanced financial results are achieved each year. Nevertheless, there is always capacity to mobilise additional funding from new sources, especially R&D grants and commercial activities. Such funding will make the Faculty more flexible and able to meet the needs of a modern curriculum.