REPORT of the Expert Panel on the

RE-ACCREDITATION OF UNIVERSITY OF ZAGREB, SCHOOL OF MEDICINE

Date of the site visit: May 11th and 12th 2015

Contents

INTR	ODUCTION	3
SHOF	RT DESCRIPTION OF THE EVALUATED INSTITUTION	5
CONC	CLUSIONS OF THE EXPERT PANEL	7
ADVA	ANTAGES OF THE INSTITUTION	8
DISA	DVANTAGES OF THE INSTITUTION	8
FEAT	TURES OF GOOD PRACTICE	8
RECO	DMMENDATIONS FOR IMPROVEMENT	9
1.	Management of the Higher Education Institution and Quality Assurance	9
2.	Study Programmes	9
3.	Students	9
4.	Teachers	9
5.	Scientific and Professional Activity	10
6.	International Cooperation and Mobility	10
7.	Resources, Administration, Space, Equipment and Finance	10
DETA	AILED ANALYSIS OF INSTITUTIONAL COMPLIANCE TO THE STANDAR	DS AND
CRIT	ERIA FOR RE-ACCREDITATION	11
1.	Institutional management and quality assurance	11
2.	Study programmes	12
3.	Students	17
4.	Teachers	18
5.	Scientific and professional activity	20
6.	International cooperation and mobility	22
7.	Resources: administration, space, equipment and finances	23

INTRODUCTION

This report on the re-accreditation of the School of Medicine University of Zagreb 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:

- Prof. Irina Milisav Ribarič, UL-Faculty of Medicine, University of Ljubljana, chair
- Prof. Akos Koller, University of Physical Education, Budapest
- Prof. Jaideep J. Pandit, Oxford University Hospitals NHS Trust
- Prof. Željka Crnčević Orlić, Faculty of Medicine University of Rijeka
- Marin Viđak, School of Medicine University of Split

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

- Marina Grubišić, coordinator ASHE
- Davor Jurić, coordinator ASHE
- Marko Hrvatin, translator

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

- The Management;
- The Working Group that compiled the Self-Evaluation;

- The students, i.e., a self-selected set of students present at the interview;
- The Vice-Dean for Teaching and Students' Affairs, programme co-ordinators and teachers;
- The Vice-Dean for Scientific Activity and International Cooperation and research projects' leaders;
- Heads of Institutes;
- Administrative staff;
- Teaching assistants and junior researchers.

The Expert Panel also had a tour of the library, IT rooms, student register desk, and the classrooms at the School of Medicine University of Zagreb, where they held a brief question and answer session with the students 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: Zagreb School of Medicine

ADDRESS: Šalata 3, Zagreb

NAME OF THE HEAD OF HIGHER EDUCATION INSTITUTION: Professor Davor Miličić, MD, PhD

ORGANISATIONAL STRUCTURE (e.g. chairs, departments, centres)

According to the Bylaws of the University of Zagreb School of Medicine constituent units are:

- Andrija Štampar School of Public Health a subsidiary of the School of Medicine
- Croatian Institute for Brain Research a subsidiary of the School of Medicine
- Educational facilities (departments, clinics, clinical institutes and teaching bases)
- Scientific organizational units (institutes, centers, laboratories, sections)
- Expert-administrative organizational unit Secretariat
- Libraries

According to the decisions of the ZSM council, the organizational structure is complemented by professional and organizational units:

- Centre for Health Services
- Centre for Academic Medical Consultations
- Career Centre for Biomedicine and Health
- Center for Palliative Medicine, Communication Skills and Medical Ethics
- Centre for Advancement of Mental Health

In addition, the ZSM has opened two very important centers for the development of science. These are:

- Centre for Translational and Clinical Research
- Croatian Scientific Center of Excellence for Biomedical Research of Reproduction and Development.

LIST OF STUDY PROGRAMMES (and levels)

University integrated (undergraduate and graduate) study of medicine:

- Undergraduate and graduate (integrated) study of medicine in Croatian
- Undergraduate and graduate (integrated) study of medicine in English

University graduate study of nursing

Postgraduate specialist study:

Dermatology and venereology, Children's and adolescent psychiatry, Endocrinology and diabetology, Physical medicine and rehabilitation, Gynecology and Obstetrics, Emergency medicine, Infectious diseases, Public health, Clinical microbiology, Clinical radiology, Maxillofacial surgery, Occupational and Sports Medicine, Family Medicine, Ophthalmology and optometrics, General internal medicine Orthopedics and traumatology,ENT, Pediatrics, Psychiatry, School and adolescent health, Ultrasound in gynecology and obstetrics, Ultrasound in gastroenterology and hepathology, Fetal medicine and obstetrics, Health care management and Psychotherapy

- Doctoral studies:

Biomedicine and Health Care

Biomedicine and Health Sciences

Neuroscience

NUMBER OF STUDENTS: full-time - 2065, part-time (postgraduate specialist study) -450

NUMBER OF TEACHERS: 384 (out of cumulative contract -280)

NUMBER OF SCIENTISTS (doctors of science, elected to grades, full-time):303

TOTAL BUDGET (in kuna): 121,479,888 HRK

MSES FUNDING (percentage): 77%

OWN FUNDING (percentage): 23%

SHORT DESCRIPTION OF HIGHER EDUCATION INSTITUTION:

The University of Zagreb School of Medicine is the oldest, most respected and largest institution offering medical studies in the Republic of Croatia. The decision on its establishment was adopted by the Croatian parliament in January 1917.

Since the academic year 1965/1966, the practice of limited registration under the terms of an entry exam is established. In the academic year 2003./2004., the first generation of students for the teaching program of six years of study was enrolled, the new curriculum was accepted, and subjects were introduced in the sixth year of study that integrate previously acquired knowledge, optional courses throughout the study based on problem solving and innovations in teaching methods and verification of acquired competences. In 2002/03, courses organized in blocks were also implemented in preclinical subjects. As the study of medicine, as well as other studies in biomedicine and health care, is specific to each university as a link between the academic and the professional community, i.e. the science, teaching and practice, any changes in these systems (Ministry of Science, Education and Sports as well as the Ministry of Health) were reflected in the functioning, performance, challenges and problems in the years that followed.

The Integrated program of medical studies in English was introduced in the academic year 2005/2006, as the first comprehensive program of studies at Croatian universities thought entirely in English. The University Program of Studies in Nursing was implemented at the University of Zagreb in the academic year 2011/2012. The postgraduate studies are organized as a compulsory part of specialist training or as a separate interdisciplinary study. A great honour to the Faculty was to organize the annual conference AMSE (the Association of Medical Schools in Europe) in 2009 with the topic "Medical Schools and Postgraduate Education".

The ZSM significantly contributed to development of doctoral studies in Europe, and it achieved great international prestige by organizing international conferences on the harmonization of studies in Biomedicine and Health Sciences in Europe in 2004 and 2005.

At the first conference in 2004 the Declaration on Harmonization of PhD programs in Biomedicine and Health Sciences, called the Zagreb Declaration, was adopted.

In 2005, the international institution ORPHEUS (Organization for PhD studies in European System) was founded, with its seat at the Zagreb School of Medicine, and the organization for years was chaired by Professor Zdravko Lacković, MD, PhD, from the ZSM. Meanwhile, ORPHEUS became an associate member of the Council for Doctoral Education of the European Association of the University (CDE-EUA). Doctoral studies at the School of Medicine in Zagreb (Biomedicine and Health, Biomedicine and Health Sciences, and Neuroscience) are characterized by rich tradition, reputation and successful graduates.

CONCLUSIONS OF THE EXPERT PANEL

ADVANTAGES OF THE INSTITUTION

- 1. Enthusiasm of the staff, teaching staff, junior research staff despite the financial constrains
- 2. Impressive research paper record, grant awarding record given financial constrains
- 3. International collaborations
- 4. Integrated program of medical studies in English (MSE program)

DISADVANTAGES OF THE INSTITUTION

- 1. Lack of sufficient teaching staff, especially the young
- 2. Students are not properly informed on the results of their suggestions/feedback
- 3. Alumni network should be better developed and be more active
- 4. Strategy/policy for regular visits of teachers from abroad and for hosting conferences is not well developed

FEATURES OF GOOD PRACTICE

- 1. Study programme in English
- 2. Orpheus system (standardization of Ph.D. courses among the Faculties of Medicine)
- 3. Coordinating FP 7 project OSTEOGROW

RECOMMENDATIONS FOR IMPROVEMENT

1. Management of the Higher Education Institution and Quality Assurance

- Cumulation (staff employment at Medical School and Clinics) would be improved by allocating/clarifying and having legal resolution to the amount of time per week that the staff spends working for the Medical School.
- Collect more numerical data (e.g. on achievements, qualifications, age, gender, rank etc.) and include them into Self-evaluation report to help monitor the progress.
- Teaching quality should include student feedback and formal senior Faculty review.
- Research quality should be monitored using appropriate metrics adjusted for sub specialities.
- Ensure that pathways to raise concerns are clear and known to all Faculty members, including junior staff.

2. Study Programmes

- Allocation of ECTS should reflect realistic estimate of student workload in all subjects.
- Junior teachers should be assigned to a teaching mentor to develop their skills and progress recorded. Extend the didactic programme of teacher training.
- Wireless internet access should be widened to enable increased access to electronic resources.

3. Students

- Faculty should do a follow up on graduates former students and create a functional Alumni network.
- Student representatives on Council should be more active in communicating with the wider student body. Faculty should ensure that the student surveys have better response rate.
- Students who provided feedback should be reassured that action is taken based on the survey.

4. Teachers

 Although it is recognized that government rules prevent further employment of faculty, outsourcing is not a long term solution. Disproportionate number of part-time employees could destabilize the institution. Therefore the Organisation should consider employment of junior Faculty out of their own funds. The ZSM should make representations to Government to change the current policy on teacher and researcher employment.

5. Scientific and Professional Activity

• Although it is recognized that government rules prevent further employment of faculty, outsourcing is not a long term solution. Disproportionate number of part-time employees could destabilize the institution. Therefore the Organisation should consider employment of junior Faculty out of their own funds. The ZSM should make representations to Government to change the current policy on teacher and researcher employment.

6. International Cooperation and Mobility

- The institution can attract teachers from abroad by developing the policy and continuous programme of visiting professorships to short term visiting professorship to engage in teaching and research collaborations.
- Exploit the Alumni organization to encourage past students for similar visits
- Hosting regular scientific conferences in Zagreb to internationalize the visiting scientific community

7. Resources, Administration, Space, Equipment and Finance

- More teaching and research faculty and staff are needed. As the governmental rules
 prevent further employment of staff it is difficult to achieve the optimum ratio of
 faculty to students.
- Improve the remote access to full text of journals available in the library.

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

1. Institutional management and quality assurance

1.1, 1.3, 1.4 There have been significant improvements of management and quality assurance of this school in the last few years. The Regulations on Quality Assurance and the Manual on Quality Assurance were adopted since 2011 and the Quality Promotion Committee as a separate body was established to plan, prepare and implement the process of internal quality audit. ZSM went through several processes of international and national external evaluations, including the Peer Mission of the European Community in 2007, as part of the accession process of Croatia into the EU, and in 2012 within the process of monitoring of Croatia preceding Croatian membership of the EU. The audit of the quality assurance system was done in 2011 during the last period of accreditation. As a part of a pilot programme of the European Consortium for Accreditation, the Medical Studies in English programme was evaluated for its quality in internationalization through the Agency for Science and Higher Education and by an international panel of evaluators in 2014, and was awarded the Certificate for Quality in Internationalization.

As the ZSM has been reviewed and served as the model institution in the short period of time for so many times it meets high standard of good management and quality assurance. Criteria 1.1, 1.3, 1.4 are therefore assessed as fully implemented.

However, the expert panel feels there is room for improvement in the following areas:

1.2 Organizational processes could be improved in the cases of dual employment of staff at ZSM and Clinics (Cumulation) by clarifying and allocating the amount of time per week that the faculty/faculties spends working for the Medical School. The faculty should ensure that the students of the medicine programme in English are represented proportionally in the faculty bodies. The care should be taken to ensure a clear communication with students to ensure that the feedback on the improvement measures taken by the Faculty is conveyed back to every student. For better communication the website/homepage of ZSM can be used. The management should consider introducing annual recognition of the best teachers and other staff by the students.

1.5 The institution could collect/extract more numerical data on achievements, qualifications, gender, rank, performance of the Centre of Translational and Clinical Research etc. and include them into Self-evaluation report to help monitor the progress. As there seems that many students are not interested to participate in debates on faculty organization (also confirmed by the students themselves), their views could be heard only if the answering of the questionnaires is made obligatory. Facebook networking can also be advantageous for communication with the students.

1.6 Teaching quality measurement should include student feedback and formal senior Faculty review.

1.7 At the moment monitoring the improvement of research quality is largely based on following the IF, which may not evenly measure the journal quality across different sub specialities. Assessments could improve by following the development in monitoring of science quality by other measures (e.g. publishing in top 5% of journals within each research field, quartiles...).

1.8 There are mechanisms for monitoring unethical behaviour; however the Faculty should ensure that pathways to raise concerns are clear and known to all faculty members, including junior staff, and to provide a feedback when concerns were raised.

2. Study programmes

2.1. - 2.5. There are three Study programmes currently running at ZSM: University integrated (undergraduate and graduate) study of medicine in Croatian and English, University graduate study of nursing and Postgraduate study.

University integrated study in Croatian performs medical studies/teaching in the Croatian language by a single, integrated program for a period of six years. The program was (re)accredited with the permit of 2009/2010. The total number of hours complies with the recommendation of Directive 2005/36EC of the European Commission and Parliament, which states that the basic education of doctors should include at least six years of study, or 5,500 hours of theoretical and practical university teaching. The course is full time and has an

enrolment quota of 300 students annually who study at the expense of the Ministry of Science, Education and Sports of the Republic of Croatia. Enrolled students are evaluated using State Matriculation exams (in the highest level of knowledge), medical school admission test and high school success. The Panel recognizes the importance that Zagreb School of Medicine selects its prospective students. This study embraces regular (mandatory) and elective subjects which are verified by ECTS values. A six-year course of study is completed with the graduation (final) exam, which consists of a written exam and the public defence of the thesis that a student composes under the guidance of a mentor.

Undergraduate and graduate (integrated) study of medicine in English

The University of Zagreb, School of Medicine obtained the permit for the English language medical study in 2005 as full time study with tuition fee. The total class obligation of students has been harmonized with the EU requirements, and the study bears 360 ECTS credits. Today, there is a growing interest in this study, in which 50 students enrol annually. They come from different countries in the world which is described in detail in chapter of the self-evaluation that relates to students. Therefore, the entrance exam is organized not only in Zagreb, but also in Israel, Sweden and Germany. The rules of study are the same as for the study of medicine in the Croatian language. At the final year of study, the horizontal and vertical integration of knowledge, skills and attitudes is performed through the subject "Clinical Rotations" when the student has the possibility to stay in health institutions/hospitals in the Republic of Croatia or go abroad, e.g. to the country where they plan to work after graduation. In this way, students are able to learn about other health systems and to adjust to the location of a possible future employment. Since 2009, the hourly rate for the course "Croatian Language" has been increased, which improved the clinical part of the study that involves communication with the patient, but also the integration of students of English studies into the Croatian society.

University study of nursing

The University of Zagreb School of Medicine obtained a permit for the University study of nursing at the session of the Senate on November 16, 2010 and thus the first time in Croatia nurses, as key agents of providing health care in the health system, were given the possibility of a university study whose completion awards the title "Master of nursing", and allows them to continue the career at the postgraduate/doctoral studies. Although the School of Medicine in Zagreb has a long tradition in educating nurses, the incentive to found the study that allows

nurses scientific research and education vertically towards postgraduate and doctoral studies was the process of the Croatian accession to the European Union. Since the academic year 2011/2012, 50 students enrol the regular University study of nursing at the expense of the Ministry of Science, Education and Sports. The right of enrolment is given to candidates who have completed (a) a three-year university undergraduate nursing study, (b) a two-year or three-year expert nursing study with passing the difference in modules, (c) a two-year or three-year study of nursing with a bachelor degree of any of university programs without taking distinctive modules, under the conditions in the teaching program of studies.

Postgraduate study: Doctoral studies and postgraduate program of specialist studies

Three doctoral studies in the duration of three years are being held at the ZSM: Biomedicine and Health, Biomedicine and Health Sciences (in English), Neuroscience. By completing the programmes and defending the doctoral thesis students are conferred a degree of Doctor of Science (doctor scientiarum, dr.sc.). Along with the doctoral studies referenced above, postgraduate program of specialist studies are being held, together with a separate module Generic Competences of Physicians-Specialists as an organized part of education at every specialist study program organized in the Republic of Croatia. All forms of postgraduate studies at the ZSM are adapted to the requirements of the European ECTS system of credits and requirements of the European Union of Medical Specialists (UEMS) to enable the international mobility of students and teachers, the comparability of the load of students, the teaching quality and recognition of qualifications in other European countries. The program obtained its accreditation in 2007 and was reaccredited in 2014. Doctoral study programs comprise 20 methodological and 118 professional courses covering different fields of biomedicine and health. The doctoral study of neuroscience is a full-time, fully research-oriented study. The basis for the study are 30 laboratories, equipped according to the state-of-the-art, with certain heads of research groups that are chosen because they have projects, the conditions for research, publications and proven success in leading doctoral dissertations.

The ZSM has very high enrolment criteria at all levels of the programs offered. Although this is a very long and demanding study, the interest in enrolment has not dropped in the last five years. Enrolment quotas for regular study programs at the School of Medicine in Zagreb comply with national social needs and the possibilities of the Faculty to provide quality teaching. The Faculty, however, constantly monitors, in cooperation with the Croatian Medical Chamber and the Ministry of Health, changes in the needs based on the number of (un-)employed medical doctors

and nurses, the age structure of doctors and the demands of graduate doctors who want to continue their careers abroad. For integrated medical studies in the Croatian language, today the quotas are 300 students per year. All students study at the expense of the Ministry of Science, Education and Sports of the Republic of Croatia. Also, annually, 50 students who pay tuition enrol in the Integrated study of medicine in English and 50 students enrol annually in the University study of nursing at the expense of the Ministry of Science, Education and Sports of the Republic of Croatia.

Over the past years, and even today, one of the main issues in the monitoring and evaluation of teaching and the achievement of learning outcomes is their aim and purpose. The quality of teaching is monitored at the level of the chair/course council and the ZSM, as the constituent of the University of Zagreb, also conducts University monitoring mechanisms. The following methods are used: self-evaluation of the subject at the end of the academic year cycles and, selfevaluation of teachers, evaluation of fellows, evaluation of the quality of work with students by means of specific surveys prepared by the chair or by talking with students, student portfolio, analysis of the central Faculty survey, analysis of the results of the University survey about teachers and analysis of the results of the University survey at the end of the study about their opinions on the study as a whole. A part of the chairs carries out a special valuation method of teaching called the acronym SIEN (Structured interactive evaluation of teaching). It is about a specially designed and validated method whose purpose is not only diagnostics but also improving the quality of a particular subject as a whole. The working method is used in a focus group in which the same number of teachers and (random) students, who were named as holders of evaluation, participate in direct communication. Mechanisms for monitoring the quality of teaching are applied not only at the level of graduate teaching but also in postgraduate studies (doctoral studies and specialist postgraduate studies) where surveys of participants are carried out that are prepared by the management of the study and the Committee for plans, programs and evaluation of postgraduate courses.

With respect to above mentioned, each of study programmes is in line with student learning outcomes and international standards. Mechanisms for approving, monitoring and development of these programmes and qualifications are largely in place.

2.6. The ECTS scoring was introduced at the School of Medicine in 2000, first at the doctoral postgraduate study, and then in 2001, the process of preparing the ECTS load was initiated also in the integrated study of medicine. It used its own developed methodology that was based on the load of the students in direct teaching according to the curriculum and programs, and the results of a survey conducted among teachers and students on the assessment of student workload outside of direct teaching (hours needed for learning and exam preparation). According to these indicators, the total student workload was estimated and mathematically formulated with a number of points for each subject in relation to the total annual load of 60 ECTS credits. Our observation results recommend that ECTS allocation should be reviewed for both programmes of Medical studies (in Croatian and English languages) to reflect the realistic estimate of student workload for all subjects.

2.7. The content and quality of each study programme conforms to internationally recognized standards, and is based on the latest scientific discoveries. Study programmes reflect a high number of fully implemented sub criteria.

2.8. Teaching and teaching methods: The study of medicine is very specific and the teaching methods are selected in accordance with the achievement of learning outcomes. For all study programs and all levels of education, teaching at the Faculty is carried out in the form of lectures, seminars, exercises, clinical practice (clinical traineeships), field work, mentoring work (including the scientific work of students and thesis), consultation and other forms of teaching that contribute to acquiring the prescribed knowledge, skills and attitudes. Upon the results of the student's surveys student's satisfaction was the greatest on the fifth year, which confirms that clinical practice is well organized. Also seminars and practicals as existing forms of teaching resulted in better student's grades than lectures did. Therefore practicals and seminars (interactive teaching) should be preferred ways of teaching at all study programmes.

Teaching plan and programme include a variety of teaching and learning methods, however there is still room for improvement and further development. It seems that cooperation with relevant professionals can be increased especially in the clinical part of studies. The faculty should strive to use practical learning wherever possible. As ZSM runs medical and nursing programmes they may consider introducing an inter-professional training. Junior teachers should be assigned to teaching mentor to develop their skills and progress recorded.

2.9. Supplemental resources: Availability of supplemental resources, including electronic journal databases, scientific literature and other sources that help to acquire the knowledge could be improved. Although the faculty is willing to do so they are limited by the current financial constraints. Wireless internet access should be widened to enable increased access to electronic resources by Faculty and students.

Most of the mechanisms for approving, monitoring and development of study programmes and qualifications are fully implemented. For a few of them that are mostly implemented, suggestions for improvement have been mentioned above.

3. Students

- 3.1. Enrolled students are evaluated using State Matriculation exams (in the highest level of knowledge), medical school admission test and high school scholastic success. Admission test is used to ensure that students meet the minimum demands, and Medical School in Zagreb compared the passing rates at the first year courses to check for positive effects of the admission exam. Entrance exam is administered at ZSM and different criteria exist for graduate studies in nursing as well as for Doctoral and postdoctoral specialist studies to ensure the best possible students.
- 3.2. There are a high number of extracurricular activities for students to choose from and there is a strong support from the ZSM regarding extracurricular activities. We feel this is one of the strengths of ZSM and is greatly appreciated by the involved students.
- 3.3. ZSM has stressed the importance of professional and personal development of students and has founded Croatian Scientific Centre of Excellence for Biomedical Research of Reproduction and Development.
- 3.4. Students are informed regarding knowledge assessment methods. If not satisfied with the exam results, students are allowed to refuse a grade and take the test at another time. Most courses have both written and oral exams. However, the varied approach to oral exams may be subjective. The procedures for more objective oral exams should be developed and standardized at the level of ZSM.

3.5. While there is a strong desire expressed by the Dean to form a functioning Alumni network, it is still barely implemented. ZSM collects data on students' employment. We believe there is a lot of room for improvement concerning the Alumni Organisation. The Alumni network should be organized by the faculty and independently of Croatian Medical Association or Croatian Medical Chamber.

3.6. Interested future students, as well as general public, can find information regarding study programs in numerous ways. Apart from information available at the faculty internet pages, both in Croatian and English; there are also different brochures, as well as a University Fair and Open Doors Day.

3.7. There is an established framework regarding Student Council and participation of students on both, Faculty Council and Dean's Management Board, as well as surveys regarding student opinions. However, response rates of these feedbacks are low and School of Medicine and student representatives should work together to plan ways to improve it. Student representatives on Council should be more active in communicating with the wider student body to better identify, address and solve potential problems. Concern was expressed that the Student council of the School of Medicine in English had lesser direct representation and consideration should be given to providing it a distinct participation in that process. It would help if all announcements (e.g. Studmef, activities by student groups) were bilingual. Faculty should encourage students to actively use all channels of communication and emphasize that these are non-judgmental avenues for comment.

3.8. Students who have provided feedback should be reassured that comments have been noted and where appropriate, action was being taken based on 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.

Overall, the qualifications and the number of the teaching and research staff are adequate for institutional strategic goals and in line with the Ordinance on the Content of License and Conditions for Issuing License for Performing Higher Education Activity, carrying out a Study Programme and Re-accreditation of Higher Education Institutions (OG 24/10). However, it is clear that all staff have multiple responsibilities in meeting demands across teaching, research, administration and often also in clinical practice, so perhaps greater clarity is needed in detailing this assessment in practice.

- 4.2 The institution carries out the policy of growth and development of human resources, especially taking into account potential retirements and sustainability of study programmes and research activities. There is a system of selection, promotion and human resources development (especially of scientific-teaching staff) in place, and there are efforts to implement it and continuously improve it. However, this is an area where the governmental regulations prevent complete implementation of the policies the university would like to follow. Nonetheless, within those constraints, the institution has made the best progress it can.
- 4.3 The institution takes into account the number of full-time teachers, maintaining the optimal ratio between students and full-time teachers. Notwithstanding the governmental constraints, this is fully met and there is no shortfall in delivery of teaching commitments, yet the sustainability is in question.
- 4.4 The institution has well-developed policies for scientific-teaching staff that ensure their professional development, as needed to advance the institution's mission. There is documentation relating to procedures for appointment to grades consistent with national criteria, and there are regulations on quality assurance of teaching and research. ZSM encourages staff to participate in professional development programmes and there is some evidence of local reward schemes. Also, some evidence of sanction systems where there is negative feedback. However, the overall numbers of faculties that can be promoted to senior academic grades appears to be severely limited by national regulations and this national constraint is a barrier to the progress the institution would like to make.

4.5 Policies governing the assignment of teachers' workload provide for a fair and equitable distribution of effort and include teaching, research, mentoring and student consultations. From the perspective of the institution, teaching work appears to be completely delivered, and there is in addition great effort to deliver the quantum of research work. Administrative duties are also fulfilled. So to that extent, these domains are met. However, it must be recognized that from the perspective of the individual teacher, members of faculties are in general delivering teaching, research and administrative duties, etc., over and above expectations. This is probably due to the national shortage of teachers and the national policies that restrict the recruitment of more numbers of staff that would otherwise distribute workload across staff more equitably.

4.6 ZSM ensures that teaching and research activities of the employed teaching staff are not affected by their external commitments. Faculties do have external commitments, and this is something appropriately encouraged by the institution and recognized to be of benefit. There is no evidence that these commitments adversely affect the delivery of core duties. Nevertheless, formal safeguards to assure that the teaching activities are not affected by the external commitments should be implemented.

5. Scientific and professional activity

5.1 ZSM has a developed strategic research agenda within the general strategy of the School, implementation of which is appropriately monitored, evaluated and reviewed through appropriate performance indicators, including the quantity and quality of research projects, research papers and other publications, and opinion of doctoral students on the availability of mentors, etc.

5.2 Through collaborative research work, joint grants and scientific exchange the ZSM envisions and provides for cooperation with other scientific organizations. Among the institution's strategic goals is to further develop a top-notch level of research and raise its international reputation and improve cooperation with local scientific organizations through creating synergies in various fields of science, medicine and technology; these processes will speed up upon development of the Northern Campus Project.

- 5.3 Although ZSM has a strong research basis due to its tradition and continuous efforts to maintain and improve the research quality, the governmental policy and rules that prevent further employment of researching faculties and staff could destabilize the institution, as no such organization can continuously successfully compete internationally under such constrains.
- 5.4 There are adequate number of high-quality scientific papers published annually given constrains described above. The ZSM is improving monitoring and collecting the data on collaborative scientific publications of its members.
- 5.5 ZSM has mechanisms for recognizing and encouraging scientific excellence, including rewards for the most successful scientists and students; there is an annual event Day of Dissertations in which PhD students present their work. By defining hubs of scientific excellence and e.g. recently founded Centre of Excellence for Reproductive and Regenerative Medicine they are guiding research efforts to develop specific research areas. ZSM encourage the support staff to contribute to research efforts by encouraging them to gain knowledge on EU grant administration by attending specific courses that prepares them to do so.
- 5.6 and 5.7 ZSM has an adequate number of peer reviewed scientific publications and research projects, some of them are published in top quality journals by the international standards. It is among the most productive and scientifically oriented research institutions in Croatia.
- 5.8 ZSM participates in technology and knowledge transfer through applied projects and encouragement to increase the number of clinical trials testing medicinal products, medical devices and novel techniques.
- 5.9 ZSM supports professional activities, services and counselling. The market activities contributed to 23 % of its income in 2013. The largest source of market income are tuition fees for graduate studies (doctoral studies and specialization) and undergraduate studies in English and are by their nature linked with institution's priorities in research and teaching, however, there are other activities like expert opinions and testing of wastewaters. The market income is used to cover overhead expenses of ZSM and current investment management due to the lack of budget funds. As it is estimated that reduction of institution's own income by 50 % would

jeopardize the overall activities of the ZSM, there is not much room for balancing the acquiring additional funding and preserving the institution's priorities in research and teaching.

5.10 The criterion on the high-quality of the doctoral programme is fully implemented. It is of note that faculty of ZSM was instrumental to establish the ORPHEUS society/system, which aimed at standardization of Ph.D. education, courses, requirements, etc., among the Faculties of Medicine in Europe.

6. International cooperation and mobility

- 6.1 At present, the criterion regarding national mobility of medical students is not applicable for this HEI (with regard to the integrated 6-year study programme of Medicine).
- 6.2 Nevertheless, short summer program or clinical courses at foreign medical universities can be increased being somewhat limited at present which could enhance future mobility of medical doctors.
- 6.3 The faculties of ZMS, both juniors and seniors, have very active international collaborations and connections. They have many joint publications with researchers of foreign universities. Also, ZMS encourages younger professionals to return to the home Institution. The obstacle is however, the lack of adequate and secure funding for hiring of young faculties and lack of financial incentives ("home coming grants", laboratories, etc.) to stimulate them retune to ZMS. This, in the long run, could be extremely important in order to avoid the further increase of age gap between younger and senior faculties and ensure the continuation, not only the high quality research, but also of English Language Medical Program. The limited financial resources could endanger the future of these activities.
- 6.4 ZMS has sufficient joint programs with universities abroad and also sufficient joint applications for European Research grants, but again securing the return and hiring of younger faculties from abroad would further strengthen the success of these efforts.
- 6.5 At present, the Institution has adequate attraction for foreign students to come to study medicine in Zagreb. The foreign students are enthusiastic to study at ZMS. This is important,

because there is a high competition for the English Language Medical Program in the neighbouring countries. Thus again, it would be important to maintain the present high quality teaching and research at ZMS, which can only be done by hiring more young faculties.

6.6 Conditions for attracting teachers from abroad needs to be investigated and find out the ways to increase the contribution of professors of foreign Universities (junior and senior) to the teaching activities of ZMS. This would further increase the internalization of teaching and research and facilitate joint grant applications. This may not need too much of financial support, rather better developed organization and system. Thus it would benefit to consider a formal, ongoing program of Visiting Professorships for foreign scientists/clinicians that would at low costs bring in external ideas and opportunity for collaboration. If these were even short term visits, such as 1-2 weeks, no salary would be needed, but through a course of dedicated lectures and focused discussions, much could be gained by this input from interested outsiders. Such program would also increase the chance for the faculty of ZSM to increase their teaching activity abroad, and thus internalization of ZSM.

(b) To create an ongoing program of conferences hosted in Zagreb that itself would be costeffective (as it would pay for itself) and be an opportunity to foster international collaborations and promote the visibility and profile of the institution.

6.7 At ZMS the European exchange programs and Erasmus (Erasmus plus) are developed. These needs to be maintain. The institution has several bilateral programs and cooperation. What is less clear, how ZMS - the oldest medical school - helps other medical schools in Croatia. This may be in place, but should be described and emphasized.

In general, the internationalization of ZMS is well developed, which should be maintained and improved (by further financial support) to step up to the ever increasing challenge of science and teaching in medical fields.

7. Resources: administration, space, equipment and finances

ZSM has fully implemented most of the assessment criteria given the present financial constraints. Funds can be secured for continuity of institutional activity. Criteria 7.1, 7.3, 7.4, 7.5,

7.7 and 7.8 are fully implemented, however it would be preferable and vital if the state budget could be increased to suffice for the basic running costs (like basic maintenance costs and overhead expenses).

7.2 There is an enormous shortage of teaching/research staff, which seems impossible to be adjusted by ZSM, as the governmental rules prevent further employment of faculty. While there seem to be adequate numbers of support staff, more teaching and research staff is needed. This should be adjusted in the near future; otherwise there is a serious threat to the maintenance of the quality of ZSM.

7.6 The ZSM Library fulfils most of the sub criteria; it will have to continue updating the material at the greater pace, as soon as the financial circumstances permit it. At present they should look into ways to improve remote access to full text journals for all students and faculty members.