



Session C1: Faculty Development

NOT AN AFTERTHOUGHT: HOW FACULTY DEVELOPMENT CAN DRIVE INNOVATION IN MEDICAL EDUCATION

Rachel Levine

Johns Hopkins School of Medicine, USA

Corresponding author: Rachel Levine, rlevine3@jhmi.edu

Faculty Development (FD) refers to activities designed to enhance knowledge, skills and behaviors of health professionals in their various faculty roles. Depending on the context, these roles may include: education such as teaching and facilitating learning, curriculum development, learner assessment and program development; research and administrative and leadership roles.

FD is critical for the satisfaction and success of individual faculty and is also necessary for the success of educational programs within larger medical institutions such as schools of medicine and academic health centers.

Unfortunately, most faculty do not have access to robust FD to build skills and expertise for key educational roles. Furthermore, many educational programs and curricula are designed without significant consideration for the development of faculty who will be responsible for teaching and assessing learners or evaluating programs. This can limit the success of educational programs, stifle change in medical education and frustrate faculty leaders and frontline teachers.

Faculty development is a burgeoning discipline within academic medicine. Best practices for FD, specifically using a competency framework to design programming exist and can be adapted for local context and needs. Effective FD programs as measured through participant satisfaction and reported changes in teaching by participants and learners, are grounded in learning theory, promote reflection, feedback and collaborative learning based on participants own teaching experiences. These programs also incorporate a variety of learning strategies. Communities of practice (CoP) are a model in which to situate FD to promote a sustained setting for social learning among individuals with a shared understanding and set of beliefs related to education. FD especially through vibrant CoP can create momentum for faculty to advocate for innovation and change in medical education through knowledge mobilization where educational research interfaces with educational practice.

Key Words: medical education; faculty development

TRANSFORMING PROFESSIONAL DEVELOPMENT IN MEDICAL EDUCATION THROUGH FACULTY AND STUDENT DEVELOPMENT PROGRAMS AT THE FACULTY OF MEDICINE IN RIJEKA, CROATIA

Nina Pereza

Faculty of Medicine, University of Rijeka, Rijeka, Croatia

Corresponding author: Nina Pereza, nina.pereza@uniri.hr

The higher education system in the healthcare profession is unique because professionals involved in delivering education have three simultaneous roles, including that of the healthcare provider, medical educator and scientist. However, while current mandatory programs are focused mostly on delivering education on how to become a healthcare provider, the increasing demands on professionals to acquire both teaching and research

excellence imposes challenges for organizing new concepts for additional training. These highly organized professional development activities are known as faculty development programs, but are currently underrepresented in the European higher education systems.

The aim of this presentation is to highlight the innovative approach to how the Faculty of Medicine in Rijeka, Croatia transformed professional development activities through the Centre for Improving Teachers' Competencies and Communication Skills, a specialized organizational unit, the activities of which are aimed at both healthcare professionals, as well as students. The Centre provides a plethora of faculty development programs, which are primarily focused on educational development for improving teachers' competencies, introducing innovative learning methods, conducting peer review and organization of international meetings. In addition, our rich student development programs include primarily research development, which is conducted in association with the scientific journal *Medicina Fluminensis* and represents an internationally and nationally awarded program for encouraging student scientific activities. Finally, as the result of the international collaboration between the Faculty of Medicine in Rijeka and Texas Tech University Health Sciences Center El Paso, this presentation emphasizes the importance of establishing international collaborative faculty and student development programs. The intention of such programs is to share best practices and provide support for the establishment of an international platform for improving professional competencies in the healthcare higher education system.

Key Words: medical education; faculty development; teachers' competencies; research education; medical students

TRANSFORMING PROFESSIONAL DEVELOPMENT THROUGH FACULTY DEVELOPMENT PROGRAMS: TTUHSC EL PASO EXPERIENCE

Sanja Kupešić

Paul L. Foster School of Medicine, Texas Tech University Health Sciences Center El Paso, El Paso, Texas, USA

Corresponding author: Sanja Kupešić, sanja.kupesic@ttuhsc.edu

This presentation aims to introduce the Texas Tech University Health Sciences Center El Paso (TTUHSC EP) Institutional Faculty Development Program (IFDP). This competency-driven, 8-month program is recommended to all new junior and mid-level faculty members. The goals of our program are to improve their teaching and assessment, research, administrative, and leadership skills. Our interactive online tutorials and face-to-face activities are organized into four modules: Teaching and Assessment, Research, Clinical Skills and Simulation, and Leadership Development. The Teaching and Assessment module consists of six courses: Adult Teaching and Learning, How to Build and Teach an Online Course, Technology of e-Learning, Library Skills, and Interprofessional Education courses. The Research module is comprised of five courses: Fundamental Research Skills course, Clinical Trials course, Institutional Review Board (IRB) Skills course, Writing Interest Group course, and the Grantsmanship Training course. The Clinical Skills and Simulation module focuses on the best practices of teaching and learning in the clinical simulation environment, assessment and feedback, debriefing, guided reflection, and curriculum integration. Finally, four courses are offered in the Leadership Development module: Succeeding and

Advancing as Faculty, Conflict Resolution and Negotiation, Leadership Skills, and Faculty Wellness in the Workplace courses. Every year, a broad spectrum of health sciences topics relevant to basic sciences, undergraduate, and graduate medical, nursing, and dental education are introduced in synchronous onsite activities and workshops or interactive teleconference sessions. Requirements for graduation from the IFDP are attendance of a minimum of 40 contact hours and successful completion of three projects: an oral presentation, the creation of an online module, and a written proposal for a scholarly or research project. The fact that the current IFDP offers approximately four times the number of contact hours required to graduate allows faculty participants to customize their professional development experience.

Key Words: faculty development; academic career; teaching skills; teaching in simulation environment; research skills; administrative and leadership skills

DEVELOPMENT OF TEACHING COMPETENCIES AT THE UNIVERSITY OF SPLIT SCHOOL OF MEDICINE

Joško Božić¹

University of Split School of Medicine, Split, Croatia

Corresponding author: Joško Božić, josko.bozic@mefst.hr

Excellence in medical teaching and knowledge transfer is essential in order to educate future generations of healthcare workers. Moreover, it can be said that competent teaching is a core expectation from physicians in an academic setting. Hence, emphasis in higher education institutions should be put into expanding scope of knowledge, usage of new educational technologies and active problem-solving learning approaches. This approach is constantly discussed, developed and upgraded at the University of Split School of Medicine. The teaching staff is trained through various formal forms of education for teachers organized by the School, as well as other institutions. Since 2009, we have been continuously conducting a course called Skills of Medical Education and Scientific Work, in which teachers are taught the techniques of knowledge transfer, presentation making, exam questions writing, and public speaking. Some of the covered topics also include index publications search, learning outcomes, problem based learning, team learning and microteaching. The course lasts for three days, and so far more than two hundred teachers have successfully completed it. During the COVID-19 pandemic and changes in the organization and implementation of classes, workshops were organized for all teachers on the use of distant learning applications – Microsoft Teams platform as well as the Merlin/Moodle system. Information about continuing medical education courses is regularly published on the website. Further assessment and improvement of teaching competencies at our School is managed through peer-to-peer and self-evaluation. In peer-to-peer evaluation, a colleague attends one lecture and makes a detailed assessment of teaching through a structured questionnaire, which is shown to the assessed teacher, while in self-assessment, comparisons are made with student surveys in order to self-reflect on our own competencies. These processes are carefully managed and constantly evaluated by the Committee for quality improvement. Finally, teacher education is maintained through organisation of the continuing medical education courses, which is managed by a Committee for Continuing Medical Education and a Rulebook on Continuing Medical Education, which regulates all forms of postgraduate training outside regular postgraduate study.

Key Words: teaching competencies; learning; medical education; medical student

Session C2: Policy Makers and Educational Strategies

STRATEGY OF EDUCATIONAL ROLE OF THE CROATIAN MEDICAL CHAMBER

Krešimir Luetić

President, Croatian Medical Chamber
University Hospital Sveti Duh, Zagreb, Croatia

Corresponding author: Krešimir Luetić, Kresimir.Luetic@hlc.hr

The Croatian Medical Chamber (CMC) is an autonomous and independent professional organization of doctors of medicine that represents doctors in the Republic of Croatia and abroad, which protects their rights and represents their interests. Through his work, CMC improves medical activity and takes care of the reputation of doctors and the medical profession. In cooperation with medical faculties in the country, professional societies of the Croatian Medical Association and other stakeholders in healthcare, the Croatian Medical Chamber organizes, supervises and evaluates the continuing medical education of doctors. The permanent committee of the Executive Board of the Chamber – the Committee for the Continuing Medical Education of Doctors – is in charge of the matter.

CMC, within the scope of its work, performs tasks with public powers, namely: maintains the directory of doctors in the Republic of Croatia, grants, renews and revokes approvals for independent work (licenses), maintains special registers for interns, specialists and subspecialists, maintains a register for special qualifications of doctors, maintains a disciplinary register, performs expert supervision over the work of doctors, determines the lowest price for the work of private doctors, approves the individual prices of medical services of private doctors, implements the procedure of recognition of foreign professional qualifications, performs other tasks with public powers in accordance with the law. CMC conducts disciplinary procedures, trains candidates for medical expertise, provides legal advice and other legal assistance to CMC members in their professional activities.

The Croatian Medical Chamber aims to promote excellence in medicine (professional and ethical) and ensure high-quality healthcare for patients in Croatia. The Chamber promotes: continuing medical education, the highest ethical standards, strengthening knowledge about the legal framework of the regulated profession, encourages members to personal development, creates knowledge bases, promotes the medical profession and informs its members. The Croatian Medical Chamber organizes various seminars, workshops and conferences to ensure continuing medical training of its members. This training enables doctors to be informed about the latest medical trends and best practices in order to provide the best possible care to their patients. The Croatian Medical Chamber supports and promotes ethical behavior among its members, with the aim of ensuring the best possible care and patient safety. This includes training on the ethical standards and guidelines they should adhere to in their work.

The Croatian Medical Chamber promotes, supports and controls the quality standards of health education so that doctors can provide the best possible care to their patients and encourages its members to participate in research and scientific works with the aim of improving medical knowledge and practice. The Chamber cooperates with other organizations and institutions to ensure the best possible education of its members. The Croatian Medical Chamber encourages and financially supports its members to undergo professional training abroad in order to acquire new medical knowledge or skills and share them with their colleagues in Croatia. Up to now, up to EUR 3,000 in grants have been spent for the above purpose, and more than 350 medical doctors have participated in professional training.

CMC organizes lectures on the basics of medical law for young doctors. As part of organized lectures, young doctors are introduced to their rights and obligations when performing medical activities. They are introduced to the rights of patients in the provision of health care, specialist training, professional supervision of their work and possible disciplinary liability – the Code of Medical Ethics and Deontology. The Chamber is the organizer of a large number of events, for example the Forum on Ethics in Medical Work with Psychiatric Patients and the Forum on Ethics in Emergency Medicine, Webinars (i.e.COVID-19) through which it informs its members about new knowledge in medicine.

The Croatian Medical Chamber is continuously working on publishing books and manuals for its members such as *HANDBOOKS 1-4* Continuous professional development of general and family medicine doctors. Among the above, every year, with the co-organization of other healthcare chambers, the Croatian Medical Chamber and the Faculty of Law of the University of Split organize the Congress of Coordination of Chambers in Healthcare (“KoKoZ”) and the Croatian Congress of Medical Law, in which local and foreign experts in the field of healthcare and law actively participate. The topics of the Congress are current topics from healthcare and medical law.

Key Words: Croatian Medical Chamber; medical education; medical doctors

THE FUTURE OF HIGHER EDUCATION IN THE ERA OF CHALLENGES: THE UNIVERSITY OF RIJEKA AS THE EUROPEAN UNIVERSITY OF THE FUTURE

Snježana Prijić Samaržija

Rector, University of Rijeka, Rijeka, Croatia

Corresponding author: Snježana Prijić Samaržija, prijic@uniri.hr

The European Strategy for Universities, established in 2022, explicitly formulates four main objectives for universities: strengthening the European dimension in higher education and research, empowering universities as actors of change in the twin green and digital transition, supporting universities as lighthouses of the European way of life, and reinforcing universities as drivers of the EU’s global role in leadership. In my presentation,

I will focus on the first objective of strengthening the European dimension in higher education, pointing to the growing responsibility for reinforcing European values and the European idea, which are being seriously challenged.

In terms of future resilience, the European dimension in higher education, research and innovation should address the multiplicative impact of challenges on the quality of life and work. The main tool to strengthen European values/idea in the challenging era of poly-crises with the aim of a resilient Europe is structural and long-term – integrated and comprehensive – internationalisation, interconnectedness, and inclusive and innovative cooperation. The European Commission promotes the European University Initiative (EUI) as the flagship that best meets these requirements.

The University of Rijeka actively participates in the EUI as a member of the European University Alliance YUFE – Young Universities for Future of Europe, as well as with its Strategy 2021–2025, which is entitled ‘European University of the Future’. Our activities focus on the four areas: Open Education, Open Science, Open Innovation and Open Science to promote the transversal idea of openness in all university mission areas.

Key Words: higher education, university, European University Alliance YUFE, Young Universities for Future of Europe

THE THIRD CENTURY OF EDUCATIONAL ACTIVITY: CROATIAN MEDICAL ASSOCIATION 1874 – 2023

Željko Krznarić

President, Croatian Medical Association

Department of Internal Medicine, Faculty of Medicine, University of Zagreb, Zagreb, Croatia

Corresponding author: Željko Krznarić, ured@hlz.hr

The Croatian Medical Association (CMA) was founded on February 26, 1874 for the purpose of improving protection of people’s health, professional and scientific work, fostering medical ethics and protecting class interests. It was founded under the name of Association of Physicians of the Kingdom of Croatia and Slavonia. *Liečnički viestnik* is the oldest Croatian medical journal with long-lasting tradition. The first issue was published in January 1877. In 1919, the Association changed its name to the *Association of Doctors of Croatia, Slavonia and Međimurje*. By the year 1939 the name was changed into the *Croatian Medical Association* and in 1945, to the *Association of Doctors of Croatia*.

The CMA is the founder of the School of Medicine University of Zagreb, the Croatian Medical Chamber as well as other associations and institutions in Croatia. In October 2013, the Republic of Croatia and CMA became full members of the European Union of Medical Specialists (UEMS). The CMA is also a member of the World Medical Association (WMA).

The CMA has 10 826 voluntary members in 26 branches and 163 Professional Societies. Also, it collaborates with the most relevant public institutions related to the Healthcare system of Croatia.

One of the main projects of the CMA are creation of clinical guidelines for the Healthcare system of Croatia. Since 2004, more than 70 diagnostic and therapeutic guidelines have been written by Professional Societies of CMA. In cooperation with the National Institute of Health and Care Excellence (NICE) the CMA found solutions for creating short, applicable guidelines and algorithms for the diagnosis and treatment of the most common diseases in Croatia.

During the last five years the CMA has also developed and implemented EU funded projects focused on the internationalization of higher education in Croatia (EXPPAND) and on childhood obesity prevention in Croatian primary schools (PETICA-play for health). Professional Societies of the CMA are devoted to *Life Long Learning* that consist of more than 2500 core educational activities/year. In conclusion, the CMA in its third century of educational activity, is continuously paving the way for a better future of the Croatian Healthcare system by investing in education and training of doctors that is essential for the progress of medicine.

Key Words: tradition, scientific work, guidelines, projects, education, doctors

THE ROLE OF ENTRUSTED PROFESSIONAL ACTIVITIES IN THE EDUCATION OF DOCTORS AND SPECIALISTS

Rado Žic

School of Medicine, University of Zagreb, Croatia

Corresponding author: Rado Žic, davorz123@yahoo.com

Medicine is one of the earliest, most respected, highly selective and sought-after professions. Since it deals with human health, education and control systems have been developed from the onset in order to produce experts who can competently perform their work.

Today, medical education is based on knowledge and competences. The basis of any medical education is how to put together a system of education, based on knowledge and competences, in order for it to create a doctor or specialist who will be able to competently solve the problems encountered in everyday practice.

The time frame for education is set and for now quite rigid, and the question arises how to educate individuals who do not have the same predispositions within this time framework.

Doctors today require not only knowledge and skills from their profession, but also to be a good communicator, associate – team member, health promoter, leader, scientist and professional. One of the ways of education that is directly involved in the normal process of work and takes into account the differences between individuals is education through mastering entrusted professional activities (EPA).

The concept of the EPA was developed in 2005 by Ollen ten Cate who believed that competency-based education frameworks were too abstract and theoretical for practical application in everyday practice, or in assessment of a medical student or resident. Entrusted professional activity is a key task of the profession entrusted to an individual in a particular health unit. Entrusted professional activity represents a description of the work that operationally defines the profession. They represent a job description, not a description of a person. They include a list of tasks that each clinical department or healthcare professional may have for that day, week, or any period of time. Using EPAs, educators teach students and residents and assess their progress. What is expected from the completion of education through a system of entrusted professional activities is the demonstration of the competence of performing an activity that was the subject of the entrusted professional activity that is being taught and assessed without supervision. The entire learning process is divided into a set of entrusted professional activities that fully define the curriculum or individual specialization. A student or resident should have the ability and focus and to successfully perform individual stages of the procedure independently. When a student or resident completes all the individual entrusted professional activities provided for by the program of study or specialization, he has achieved the requirements for the final exam, and the issuance of a diploma and a license for work.

Session C3: Resident Education

CHALLENGES IN IMPLEMENTATION OF EUROPEAN STANDARDS IN TRAINING REQUIREMENTS (ETR)

Nada Čikeš

University of Zagreb School of Medicine, Zagreb, Croatia; European Union of Medical Specialists, Brussels, Belgium

Corresponding author: Nada Čikeš, ncikes@mef.hr

Postgraduate specialty training is a highly standardised segment in the continuum of medical education in Europe. It is presented in the document European Training Requirement, European Standards of Postgraduate Medical Specialist Training (ETR), which defines the requirements for trainees, trainer and training institutions. In the European Union of Medical Specialists (UEMS) specialist sections create new and/or revised ETRS that are subject to a review and approval process in which the final decision is made by the National Medical Association from the EU/EEA member countries.

Implementation of the ETRs in national specialty training systems brings a number of challenges in the area of trainee education (especially assessment) as well as trainers' responsibility (process for recognition as trainer and quality management of trainers). Demanding is the process for recognition as training institution (requirements on staff, clinical activities, equipment) and quality management (accreditation, clinical governance, manpower planning, external auditing etc).

The main challenge is in achieving the goal of specialty training in accordance with competency-based medical education (CBME), oriented towards trainee's progress in the acquisition of competencies. In new ETRs the implementation of the Canadian Framework of Competencies (CanMEDS) is recommended. Special attention is paid to methods of workplace-based assessment of competencies, including clinical and procedural skills, and professional behaviour evaluation. To assess the progress of trainees the Entrustable professional Activities (EPAs) are introduced, developed for the specialty training programmes. To achieve harmonisation of the specialist training in Europe and high standards of health care, UEMS is developing the European specialist examinations that can be taken by trainees in the last year of specialty training, can be an equivalent to the national exam.

The pandemic crisis has emphasised the need to further advance the specialty training and requires the development of new contents and standards.

Key Words: postgraduate education; medical specialty; competencies; assessment; trainee; mentor

RESIDENT EDUCATION CHALLENGES IN „NEW“ SPECIALIZATION

Martina Pavletić^{1,2}, Alan Šustić^{2,3}

¹Emergency Department, Clinical Hospital Center Rijeka, Croatia

²Department of Anaesthesiology, Reanimatology, Emergency and Intensive Care Medicine, Faculty of Medicine, University of Rijeka, Croatia

³Anaesthesiology, Reanimatology, Intensive Care Medicine Clinic, Clinical Hospital Center Rijeka, Croatia

Corresponding author: Martina Pavletić, martinapp@medri.uniri.hr

The introduction of specialization in Emergency medicine (EM) as a primary specialization in Croatia was a key step forward in the health care of emergency patients, said by Fred Zeidler who was one of the founders of European Society of Emergency Medicine (EUSEM). In Croatia, EM as a primary specialization has been established more than decade ago, after at least two more decades of intensive work by a dedicated group of medical professionals. First by-law defining residency program was issued in 2009., and the last one with no major changes in 2022. Education of residents in a new specialization was full of challenges, from lack of mentors, lack of well-organized Emergency Departments (ED) in most hospitals, to certain obstacles in by-law. Emergency medicine is a highly complex specialty in which decisions for the patient's life and health are made based on limited information in a short period of time. It requires a high level of different skills and competencies, broad knowledge and flexible, communication skills. In Clinical Hospital Center Rijeka, ED has been organized since 1984, and it has been a kind of advantage. The education itself, apart from the parts defined by-law went a step forward, following the education of anesthesiology residents especially in mastering basic skills in the field of resuscitation, such as endotracheal intubation (EI). In the lecture, the problems and the disparity between the regulations and everyday clinical practice were presented on the example of EI, comparing the default competencies of EM specialists and anesthesiologists. The training of residents was carried out through daily clinical work, practicing clinical skills, problem base learning and medical simulation workshops. In the last part of the lecture, the necessity of developing EM as an academic profession with great potential for scientific research was presented. Therefore, in 2018, EM was added to the Department of Anesthesiology, Reanimation and Intensive Care of the Faculty of Medicine in Rijeka, which was then renamed to the Department of Anesthesiology, Reanimation, Emergency and Intensive Care Medicine. Good example of translation medicine with implementation of basic research in the dynamic field of EM has been done during covid pandemic in ED Clinical Hospital Center Rijeka when First molecular laboratory in EM has been established in collaboration with scientist from Faculty of Medicine in Rijeka, headed by prof. Vanda Juranić Lisnić. Despite numerous difficulties in the implementation of this specialization over the past time, an enviable cadre of young specialists eager for further development of EM has been created, who in the coming period will assume the dominant role of teachers and mentors within their profession.

Key Words: emergency medicine; resident education; by-law; clinical skills; scientific research

THE ADDED VALUE OF UEMS EU SPECIALIST ASSESSMENT

Vesna Kušec

Childrens' Hospital Srebrnjak, Zagreb, Croatia

Corresponding author: Vesna Kušec, kusec958@gmail.com

European Union of Medical Specialists (UEMS, Union Européenne de Médecines Spécialistes) has its goal to develop the highest standards in the education of medical specialists, promote harmonization of specialist training in Europe and consequently ensure similar healthcare framework for the EU populations. The UEMS was established more than 60 years ago and is now with membership of National Medical Associations from 41 countries and includes 43 medical specialties.

There is a long tradition of specialist assessment conducted by specialist sections together with respective EU Boards as a part of the quality assurance process for specialist training and currently includes almost all specialties. One of the UEMS bodies, the Council for Specialist Medical Assessment (CESMA) is dedicated to this task and performs appraisals for the exam process. The exam is constructed to assess the application of knowledge, and consists of a written part (multiple choice questions) and sometimes oral and practical parts. Inspection of the candidate's logbook is an important criterion for the exam. The UEMS exam is a mark of excellence and career progress for the successful candidate and is respected as proof of the highest healthcare specialist competencies in the EU and also in the rest of the world. UEMS has signed agreements with many countries and the UEMS exam is recognized as an equivalent to the national specialty exam or an equal alternative to national certification. The UEMS EU diploma or certificate of successfully passing the exam is not a license for work. On the national level, medical specialists awarded the EU UEMS diploma/certificate (or fellowship) represent a quality mark for the highest specialist training standards as practiced in their country.

Key Words: Competencies; Medical Specialist; Specialist Assessment; Specialist Training

TRANSLATIONAL MEDICINE: MOTIVATING JUNIOR DOCTORS WITH TRANSLATIONAL SCIENCE

Zsolt Molnar^{1,2,3}

¹Department of Anesthesiology and Intensive Therapy, Semmelweis University, Budapest, Hungary

²Department of Anesthesiology and Intensive Therapy, Poznan University of Medical Sciences, Poznan, Poland

³CytoSorbents Europe, Berlin, Germany

Corresponding author: Zsolt Molnar, zsolmolna@gmail.com

Although the iron curtain was lifted more than 30 years ago, countries in Central and Eastern Europe are still struggling to catch up with our Western European counterparts as far as quality of care and teaching standards in medicine are concerned. This is reflected in a one-way traffic of health care professionals from the East to the West and in the very low, both in number and quality, research output of the region as compared to the West. Science and research are not a *l'art pour l'art* activities. Applying up-to-date research results at the bedside has become an everyday tool over the last 20 years. Without translating evidence-based medicine into clinical routine one cannot provide the best possible care for our patients. Beyond the importance of patient management embedding research in our daily work could have a profound effect on motivating our team and especially those who are open for answering appropriate and important research questions in order to make health care better. However, learning the tools of how to perform high quality research is mandatory. This requires a completely new structure and paradigm change that is almost completely missing from Central and Eastern Europe. Translational Medicine is aiming to fill this gap. Founded in 2015 at the University of Pécs, Hungary, the program trains PhD students and teaches them how to analyse and interpret the results of already published studies by the mathematical tools of meta-analysis and systematic review, how to form an appropriate and important research question and which are the tools that help us to answer these questions. During the training of 2 years the students have to perform one meta-analysis and develop 1 or 2 other research projects, let it be registry or clinical trial. Most importantly they learn the language of clinical science, develop the ability to perform clinical research on their own and present it in such high quality that is accepted by highly ranked international journals and

forums. Over the first 5 years the program produced 300 articles with an average impact factor of 4.21. Currently there are more than 150 new students in the program in year 1 and 2 at the Semmelweis University, Budapest, Hungary. Spreading this mission all over the country and beyond the borders of Hungary may help motivating junior doctors in our region and make them feel equal to their colleagues in the West.

Key Words: clinical research; motivation; training in medicine; translational medicine

Session C4: Mentoring

THE ROLE OF MENTOR DURING SPECIALTY TRAINING

Venija Cerovečki

School of Medicine, University of Zagreb, Croatia

Corresponding author: Venija Cerovečki, venija.cerovecki@mef.hr

Mentorship during specialty training, particularly during competency-based specialty training, is fundamental to the intellectual and professional growth of the mentee; mentees often look for astute guidance regarding career pathway from their mentors, based on an assessment of their skills and attitude. Mentoring is a time-proven strategy that can help young physicians to achieve their fullest potential, with good mentorship being a prerequisite for success in any medical specialty. The most beneficial forms of mentoring include positive relationships with attending physicians that result in trustworthy, nurturing environments that facilitate learning. There are five types of mentors that can be instrumental for a mentee: educator, challenger, moderator, career planner and connector. A truly great mentor often embodies more than one of these mentorship characteristics. It is important to understand that mentees may often find more than one mentorship attribute in a single mentor, mentor who knows when to push, when to act with caution, when to teach, and when to inspire. It is also possible for mentees to find these individual attributes in different mentors, in which case they should define the role and the impact of each mentor. A mentor–mentee relationship is defined as a dynamic reciprocal relationship environment between an advanced career incumbent (mentor) and a beginner (mentee), aimed at promoting the development of both. The mentor-mentee relationship is a dynamic, multifaceted relationship wherein both parties have responsibilities and stand to gain if the relationship functions optimally. Mentor should use a way to train mentee that is not only effective, but also friendly and collegial. This easy-going environment fosters learning and ensures optimal performance. Every mentee desires a mentor that maintains an “open-door policy” to address concerns and questions that arise during the course of training. Maintaining the sustainable trainer’s network is essential for successful specialty training programme implementation.

Key Words: Medical education; mentor; specialty training

EMERGENCY DEPARTMENT MENTORING PROGRAM FOR YOUNG PHYSICIANS

Martina Pavletić

Emergency Department, Head, Clinical Hospital Center Rijeka, Croatia

Department of Anaesthesiology, Reanimatology, Emergency and Intensive Care Medicine, Faculty of Medicine, University of Rijeka, Rijeka, Croatia

Corresponding author: Martina Pavletić, martinapp@medri.uniri.hr

Emergency medicine is a very complex and unique medical specialty and very often emergency medicine departments are the only entrance for many patient into the healthcare system. Specialists in emergency medicine have to have broad knowledge in acute illnesses, special medical conditions as intoxications, injuries and more complex as politraumatic patients or resuscitation. In emergency medicine, decisions for the patient’s life and health are made based on limited informations in a short period of time, which requires a high level of com-

petence and skills from medical to communication ones. Medical students have their first encounter with emergency medicine during college. Following the internship abolition in 2019 and the introduction of mentoring program from our Ministry of Health, an opportunity has been created for newly graduated physicians to start initial education and acquire practical skills in highly “busy” environment such as emergency departments. In November 2019, Clinical Hospital Center Rijeka admitted first group of young doctors for the “Work under supervision program”. We started with the education program from the first generation and gradually improved it. It is carried out through four educational modules, and after each module there is a written and oral test followed by mentor’s meeting. Currently we are under developing proces of completely new module, Module V (5th module), that will be dedicated to mastering basic skills in the point-of-care ultrasound in emergency medicine. We take the education of young physicians seriously, which is why we conducted an evaluation of our work and program through a survey – the opinion of young physicians about the training method and their work with positive feedback which gave us reasure to continue in the same direction. In the presentation Modules and survey analysis will be showed and explained in more details.

Key Words: education; emergency medicine; modules

WHY FACULTY MENTORING MATTERS?

Sanja Kupešić

Texas Tech University Health Sciences Center El Paso, El Paso, TX, U.S.A.

Corresponding author: Sanja Kupešić, sanja.kupesic@ttuhsc.edu

This presentation aims to introduce the Texas Tech University Health Sciences Center El Paso (TTUHSC EP) Faculty Mentoring Program (FMP). This comprehensive, outcome-driven two-year FMP assists junior and mid-career faculty in improving their teaching, research, and administrative/leadership skills to succeed in their academic career. Before enrollment, mentors undergo training to develop their mentoring, time management, and communication skills. They are informed about their mentorship responsibilities in providing structured guidance and constructive feedback to their mentees. The orientation session helps both parties establish a psychological connection, set the goals of their mentoring relationship, and communicate the expectations. The effectiveness of faculty mentoring programs is measured by comparison of the key performance indicators (e.g., number of peer-reviewed publications and presentations at local, regional, national, and international conferences, teaching evaluations, and administrative roles and experiences) before enrollment in the FMP (baseline data), over time (e.g., achievements outlined in the quarterly progress reports), and at separation. Anonymous surveys are used for subjective assessment of the mentoring relationship and experiences. Long-term objective data, such as scholarly productivity and indicators of career advancement (e.g., promotional paths), available from different sources (e.g., PubMed, public information on promotion success), are regularly evaluated by the TTUHSC EP Office of Faculty Development. A thorough evaluation of TTUHSC El Paso FMP indicated that most mentees achieved or exceeded their goals, meaning that institutional investment was successful.

Key Words: Academic Career; Administrative Skills; Faculty Mentoring; Leadership Skills; Research Skills; Teaching Skills

Session C7: CLINICAL SKILLS AND SIMULATION

IMPLEMENTATION OF THE 6-YEAR LONGITUDINAL COURSE ON FUNDAMENTALS OF MEDICAL SKILLS IN THE CORE CURRICULUM: IMPACT ON STUDENTS/GRADUATES AND EDUCATORS

Vesna Degoricija

University of Zagreb School of Medicine, Zagreb, Croatia

Corresponding author: Vesna Degoricija, vesna.degoricija@gmail.com

Setting standards in undergraduate medical education is a crucial but still developing research area in Croatia. Improvement and innovation in teaching and education are primary goals of the University of Zagreb School of Medicine program. A definite step in this direction was made by the introduction of the 6-year longitudinal course Fundamentals of Medical Skills (FMS) in 2011. The course content follows the core curriculum subjects. FMS is focused on communication as well as practical and clinical skills. It delivers content through a combination of simulation on mannequins, role-play and meet-my-patient scenarios. The course involves 212 tutors and 1,800 students (sds) in each academic year. It comprises practical skills such as washing hands; basic, advanced, paediatric and trauma life support; drawing blood; urinary catheter and nasogastric tube insertion; intravenous/intramuscular/subcutaneous injection; out-of-hospital labour; immobilisation; clinical case simulations; role-playing situations and standardised patients – all with the aim to prepare sds for residency or clinical practice as graduated junior doctors. Participants get the opportunity to experience the advantages of teaching methods including practical, clinical and communication skills by participating in prepared scenarios. The Calgary-Cambridge model was adopted and sds are expected to take an active role in the learning process. The same tutor follows a group of 10 sds throughout all six years, for 30 teaching hours per each academic year.

Tutor/mentor characteristics are also an important component of the process. They should have basic core teaching skills, be trained for their role and provide high-quality education. Standardisation of the teaching is ensured by two-day courses for tutors, followed by pre-course training every academic year, teaching session plans and a tutors' guidebook including a detailed teaching plan, materials, aims and learning outcomes. Each year ends with an exam comprising 3 Objective Structured Clinical Examination (OSCE) stations.

Assessing sds' and tutors' attitudes toward learning is essential. Their feedback provides awareness as to which aspects of the course could be enhanced or changed. In five generations 83.7% sds found the course useful, 92.9% favoured practical over communication skills, 86.5% preferred to be taught on patients, 62.4% were able to use the skills acquired through FMS in other courses during the study, 82.3% found practical skills more useful in the higher years and reported implementation of the skills acquired through FMS in other courses during their study, 75.2% found that more time for practice on mannequins would be desirable. However, they appeared to underestimate the importance of communication skills. 78% preferred OSCE stations to traditional oral exams. Among lecturers' qualities, knowledge (89.4%), communication skills (75.2%) and approachability (73%) were most valued.

Key Words: education development; undergraduate; medical education; communication; clinical skills

DESIGNING CLASSES FOR MEDICAL STUDENTS WITH LITTLE OR NO EXPERIENCE IN SIMULATION

Erika Šuper-Petrinjac

Faculty of Medicine, University of Rijeka, Rijeka, Croatia
Clinical Hospital Centre Rijeka, Rijeka, Croatia

Corresponding author: Erika Šuper-Petrinjac, erikask@uniri.hr

In Croatia, not a single Faculty of Medicine has a standardized multidisciplinary simulation centre. Simulation is present throughout all the years of studying but significantly varies between Faculties and between Depart-

ments. Students unfortunately, for the most time throughout all the years of study, do not practise simulation systematically. Due to the lack of simulation experience, trying to copy simulation protocols from different curriculums usually means problems and hardly achieves wanted goals. The author provides the experience of Kabinet vještina (Skills Lab), a small simulation centre of the Department of Anaesthesiology, Reanimatology, Intensive Care and Emergency Medicine at the Faculty of Medicine at the University of Rijeka in creating classes for such students and the ongoing evolution of advanced simulation courses for final year medical students with minor experience in simulation.

Key Words: advanced simulation courses; adapting simulation; healthcare simulation; Kabinet vještina (Skills Lab); medical simulation

SKILL LAB

Alen Protić

Department of anesthesiology, reanimatology, intensive care and emergency medicine
Medical Faculty University in Rijeka, Croatia

Corresponding author: Alen Protić, alen.protic@uniri.hr

The basic purposes of developing a simulation center come from the fact that practicing in a realistic resuscitation situation is ethically unacceptable, that exercise after suspended resuscitation is ethically considered controversial and that skills and knowledge in clinical medicine cannot be fully mastered during a stay in different departments. Due to the impossibility of learning these procedures on patients, simulation centers allow the possibility for students and course participants to practice them on „models” in places built exclusively for that purpose. The aim of this lecture is to present the Skill lab – a teaching base of the Faculty of Medicine, the Faculty of Health Studies and the Faculty of Dental Medicine.

Our first Skill lab was constructed 2001 and the first equipment included teaching models for cardiopulmonary resuscitation procedures, including „Airway“, „Basic Life Support“ and „Advanced Life Support“. In 2013, the Skill lab moved to a new, adapted space within the University Campus of the University of Rijeka. It extends to 160 m² and is equipped with the latest simulation equipment that can be used to train both lay people and highly specialized health professionals. The main principles of education in Skill lab include working in small groups, individual approach, active exercises on models while respecting the predetermined exercise structure and time limits, preparation of the skill station, creation of scenery – simulation of reality and preparation of the scenarios of certain medical conditions. The teaching staff follows the doctrine and algorithms of the European Resuscitation Council and includes 46 ALS instructors, 21 ETC instructors and 8 students demonstrators. At the Ultrasound Skills lab we offer several courses, including „Airway, thorax and abdomen ultrasound in emergency medicine“, „Ultrasound guided regional anesthesia“, „Summer school“, „Ultrasound in intensive care and emergency medicine“, „Focus Assessed Transthoracic Echocardiography – basic and advanced Heart US“, „US guided Percutaneous Dilatative Tracheostomy“.

Key Words: skills lab, simulation center, cardiopulmonary resuscitation procedures, clinical simulation

CHALLENGES IN IMPLEMENTING OSCE AT THE UNIVERSITY OF SPLIT SCHOOL OF MEDICINE PHARMACY PROGRAM

Doris Rušić

Department of Pharmacy, University of Split School of Medicine, Split, Croatia

Corresponding author: Doris Rusic, drusic@mefst.hr

The preparation of the first Objective Structured Clinical Examination (OSCE) introduced at the University of Split School of Medicine Pharmacy program will be described. OSCE is held as the last or sixth partial exams of the 6-month Professional training course of pharmacy students. This OSCE comprises of seven stations, five of which are interactive. Starting point was to define the skills that will be examined for which we used the Croatian Competency Framework for Pharmacists as template. Furthermore, it was necessary to ensure adequate

number of rooms in which the examination will be held in the way that communication among students is not possible and to prepare adequate number of qualified professors and staff members that was needed to conduct the examination. For this, support from the Faculty was critical. Duration of exam was taken into consideration as it should not be too overwhelming for students, actors or examiners. Finally, predicting possible problems that may occur during the examination and means to overcome them were developed. This OSCE was first pilot-tested and this pilot led to some modifications in number of tasks per station as well as the point threshold at some stations. Finally, it was necessary to make substantial changes in the program to ensure students were prepared for this type of exam. Areas in which today's OSCE is limited and where it may be improved will also be presented and analysed.

Key Words: OSCE ; Pharmacy ; Professional training

Session C8: INNOVATIVE LEARNING METHODS

STUDENT-CENTRED LEARNING IN THE CONTEXT OF EXTERNAL QUALITY ASSURANCE

Irena Petrušić

Agency for Science and Higher Education, Zagreb, Croatia

Corresponding author: Irena Petrušić, irena.petrusic@azvo.hr

Quality assurance and management of higher education institutions and programs is in the centre of attention of various policies at the European and national level. The paradigm focusing solely on the quality of teacher and teaching process is transforming into one aiming at student learning. According to this approach, students have an active role which enables the effective learning process and taking responsibility for one's own learning. Within the quality assurance framework, the learning-centred approach was emphasized throughout the 2015 version of Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) and translated into the national quality assurance context through external institutional evaluation standards. The aim of the analysis of 7 SCLT elements (inclusive curriculum and pedagogy; flexible learning pathways; technology-enhanced learning; learning and teaching support; inclusive learning spaces and libraries; community engagement and partnerships) related to student-centred learning deriving out of institutional accreditation reports is to indicate institutional practices and obstacles related to the implementation and improvement thereof. As the review teams' findings indicate, SCLT is present at Croatian universities in various forms, however, a systematic approach to its implementation and evaluation is still lacking. Institutional quality mechanisms aimed at encouraging the autonomy and responsibility of student learning ultimately leads to the improvement of institutional and program quality so higher education institutions as well as evaluation methodologies should consider implementing this approach in a more harmonized and systematic manner.

Key Words: student-centered learning; quality assurance; institutional evaluation

APPLICATION OF PEER-ASSISTED LEARNING MODEL IN ANATOMY PRACTICAL LABORATORIES TO IMPROVE MEDICAL EDUCATION

Hakkı Dalçık

Istanbul Aydın University, School of Medicine, Department of Anatomy, Küçükçekmece, Istanbul, Türkiye

Corresponding author: Hakkı Dalçık, hakkidalcik@aydin.edu.tr

“Peer-Assisted Learning Model”, can be defined as a learning method in which the students are placed in a multimodal learning, teaching, and discussion environment. In the present study we applied this this teaching

method to our medical students in the Anatomy labs. The aim of this teaching approach is to get the highest efficiency from the models and the cadavers used in the demonstrations and overall to improve our medical education. To investigate the outcome of “Peer-Assisted Learning Model” a survey was applied to the first- and second-year medical students in the Anatomy practical labs. “Peer-Assisted Learning Model” is applied in each table of 5 students. After each amphitheater class the presenter gets prepared for the next couple of days and the presents their topic to the lecturer. The lecturer fills the gaps and makes the necessary corrections and makes the presenter fully prepared for his lab presentation by using the Anatomic models and cadavers. At the end of the year a survey of ten questions was applied to total of 270 medical students at Istanbul Aydın University. The results were evaluated using the ANOVA-T test. The results show the followings: (1) due to the secure environment formed by the students the students can ask their questions without any hesitation, (2) since the presentation proceeds in a Q&A format it was possible to analyze the topic in depth, (3) it was obvious that the presenter learned and assimilated the topic much better, (4) the presenter established a behavior of self-confidence and sense of responsibility was developed. The present results were found to be statistically significant. In conclusion, application of “Peer-Assisted Learning Model” in the Anatomy labs is more beneficial than the classical sessions.

Key Words: peer, anatomy, medicine, education, laboratory

INNOVATIVE PEDAGOGICAL APPROACHES IN MEDICAL EDUCATION

Mirza Žižak

Medical Faculty University of Zagreb, Zagreb, Croatia

Corresponding author: Mirza Žižak, zizak@mef.hr

Medical education has undergone significant development in the last three decades, with advancements in digital technology playing a critical role. These technologies have opened entirely new fields in medical education, such as artificial intelligence, deep learning, telemedicine, learning analytics, gamification, virtual patients, and augmented and virtual reality, facilitating significant changes in how students, physicians, and other primary care professionals are educated and trained. Incorporating these technologies effectively into teaching requires a significant effort to redesign the curriculum, provide teacher training, and develop the necessary infrastructure. However, the introduction of digital technology in medical education requires a fundamental shift in the pedagogical approach to teaching and learning. Teachers need to become familiar with the new tools and strategies and learn how to use them effectively to engage and motivate students and promote their learning. Flipped classroom (FC) model is an innovative pedagogical approach, that has been gaining substantial attention in the last decade because it put the student at the center of the teaching process and assigns them an active role in the learning process. This approach is in accordance with the learning theory of Bloom’s revised taxonomy, as students first gain basic knowledge and comprehension (the lower levels of cognitive work) outside of the classroom which frees up class time for active learning (the higher forms of cognitive work) when they have the support of their teachers and classmates. The advantage of the FC model is its scalability and adaptability to meet students’ learning needs. It can include flipping just a particular learning unit, only a part, or even the whole course. Despite the fact that there is no single model for the flipped classroom, core features generally include: providing content in advance (generally a pre-recorded lecture), educators’ awareness of students’ understanding, and higher-order learning during class time. In order to implement the FC, educators need to redesign their curriculum to integrate pre-class activities into f2f classes with active learning pedagogies founded upon a constructivist theory. Introducing the FC approach in our physiology course had a significant impact on teaching and learning. Our students expressed high levels of satisfaction with the FC approach because it increases their motivation to learn and enhances their level of engagement, and interest in the subject matter.

Key Words: medical education; flipped classroom; Flipped learning

MEANINGFUL LEARNING DESIGN AND LEARNING ANALYTICS

Blaženka Divjak

University of Zagreb, Faculty of organization and informatics, Croatia

Corresponding author: Blaženka Divjak, blazenka.divjak@foi.hr

Learning analytics (LA) has been opening new opportunities to support learning in higher education (HE). LA dashboards are an important tool in providing students with insights into their learning progress, and predictions, leading to reflection and adaptation of learning plans and habits. There is a growing interest in coordinating learning design (LD) with LA, as the two can mutually provide valuable input and enhance quality of teaching and learning. Furthermore, to ensure the validity of an assessment program, it is essential to align it with the intended learning outcomes (LO).

Therefore, a comprehensive LD concept and tool is needed that considers the needs of educators. The Balanced Design Planning (BDP) concept and tool (learning-design.eu) aim at implementing contemporary research findings and theory to support balanced LD planning and development. The student-centered BDP concept and tool provide innovation to LD planning by strongly focusing on learning outcomes LOs and student workload, aligning study program and course level LOs, ensuring constructive alignment and assessment validity, enhancing LD by using learning analytics, and enabling flexible use in different contexts and pedagogical approaches.

Moreover, even though the BDP concept and tool can support the implementation of various pedagogical models and approaches, as they are based on LOs and student workload, they are envisaged as student-centered with the constructivist theoretical approach, and therefore not completely pedagogically neutral. Flipped classroom (FC) approaches, work-based learning and other innovative teaching and learning approaches have been proved successful when planned, implemented and monitored with care and based on LD and LA. Finally, well-planned innovative learning approaches are invariant of mode of delivery. For example, research findings indicate that those who had used FC approaches in face-to-face or blended learning environments more successfully continued to use them more successfully in online environments than those who had not used it before.

Key Words: flipped classroom; learning analytics; learning design; work-based learning

PERSPECTIVES OF USING LEARNING ANALYTICS IN MEDICAL EDUCATION

Iva Bojić¹

¹Nanyang Technological University, Lee Kong Chian School of Medicine, Singapor

Corresponding author: Iva Bojić, iva.bojic@gmail.com

The purpose of medical education is to enhance the abilities of doctors, nurses, and allied healthcare professionals to meet the health needs of patients, communities, and populations. Digital education, which is learning through electronic technology, is becoming a popular form of continuing education in both academic and clinical settings. With the onset of COVID-19, learning through digital platforms has become the standard worldwide. These platforms are online systems that automate the management, delivery, tracking, and reporting of learning activities, thus generating large amounts of data about student learning, which can be further analyzed with Learning Analytics (LA). LA can be defined as the “measurement, collection, analysis, and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs.” In this lecture, we will first present a life cycle of LA starting from digital education content creation, followed by the data collection process, the use of analytics to process the collected data, and the purposes for which LA was used. Then we will present the identified the gaps in the current practice and finally propose how to close them.

Key Words: Cooperative/collaborative learning; COVID-19; Data science applications in education; Distance education and online learning; Distributed learning environments; 21st century abilities

Session C10: e-LEARNING

HeMED PLATFORM – CROATIAN ELECTRONIC MEDICAL EDUCATION

Marko Dragić¹, Boris Ujević²

¹ Technical Coordinator of HeMED Project, Community Health Centre Zadar, Zadar, Croatia

² Department of Gynecology and Obstetrics University Hospital Sveti Duh, Zagreb, Croatia

Corresponding author: Marko Dragić, Marko.Dragic@hik.hr

HeMED is the acronym for Croatian electronic medical education („HRVATSKA ELEKTRONIČKA MEDICINSKA EDUKACIJA“). HeMED is the contemporary technological solution on Croatian language for medical professionals and patients provided on web page and mobile application. Inspired by Željko Ivančević, MD, the project was successfully launched and finished with the help of Croatian medical chamber and If! (Innovative pharmaceutical initiative).

On the pages of hemed.hr important international textbooks and an always up-to-date drug database are translated for medical professionals and the public.

The editions available for searching and reading are: MSD Handbook for Patients (2019), MSD Handbook for Professionals (2018), MSD Handbook of Disease Symptoms, Pharmacogenetics in Clinical Practice (2021), Harrison: Principles of Internal Medicine of Medicine (pocket manual) (2019) and Harrison: Principles of Internal Medicine (textbook). All of the mentioned editions are connected to the drug database, which is regularly updated. When reading the text, each drug that is listed can be opened directly in the drug database, also by viewing the drug readers can see all texts that have that drug in it.

The goals of HeMED are to encourage citizens' health literacy, provide students with contemporary literature in the Croatian language, and support doctors in their daily work.

Hemed.hr is used daily by 6,000 users with a growing tendency. In the future, we plan to update all translations with the latest editions and include other important editions on hemed.hr.

In conclusion, HeMED is the result of the volunteer work of about 400 medical doctors of all specialties and all age groups who diligently translated about 20,000 pages of medical literature to help their colleagues and patients.

Key Words: electronic medical education, health literacy, medical literature

EACADEMY OF THE CROATIAN MEDICAL CHAMBER

Alen Babacanli

UHC Sisters of Mercy, Zagreb, Croatia

Corresponding author: Alen Babacanli, alen.babacanli@hik.hr

The eAcademy of the Croatian Medical Chamber represents an innovative e-learning platform designed for physicians and medical professionals, providing free access to professional education and continuing medical education. The platform consists of two key elements: Hemed, an education management system, and Panopto, a platform for videoconferencing and recording lectures.

E-learning offers numerous advantages, such as flexibility, accessibility, and individual customization. The goals of the eAcademy of the Croatian Medical Chamber include promoting continuous education, integrating membership, encouraging personal development, improving knowledge and skills, creating a knowledge base, and informing members.

The content of the eAcademy encompasses professional education, access to electronic medical publications (HeMED), education in law and medicine, skill development, and information from healthcare and the medical profession. The future of e-learning in medicine suggests greater integration with advanced technologies, which will enable a better learning experience and improved competencies for medical professionals.

In conclusion, the eAcademy of the Croatian Medical Chamber provides advanced tools and resources for e-learning, offering numerous advantages compared to traditional educational methods. Through free access to various forms of education, the eAcademy enables professional and personal development for its members, enhancing healthcare quality and promoting the medical profession.

Key Words: Croatian Medical Chamber; innovative e-learning platform; professional education

INTERACTIVE TEACHING MATERIALS IN THE MOODLE SYSTEM

Martina Mavrinac, Maja Marković

Faculty of Medicine, University of Rijeka, Rijeka, Croatia

Corresponding author: Martina Mavrinac, martina.mavrinac@uniri.hr

Education is a continuous and flexible process that requires great investment and effort from both sides, from us who teach, but also from the students who learn. Information and communication technology (ICT) has been used for educational purposes for many years, and since Pandemic 2020, any teaching and learning process is unthinkable without the use of ICT.

However, the use of new technologies primarily requires a high level of digital literacy on the part of lecturers, as well as the motivation and willingness to improve and perfect their own ICT skills in order to create a new teaching environment. To meet the needs of lecturers and the education system, a free online teaching platform, Moodle, was created.

The Moodle system is used for the creation of electronic educational content and distance learning. It has been used at the University of Rijeka since 2006, first under the name MUDRI and today under the name Merlin. What is special and useful about such a system, apart from the provision of online courses, are the various forms of interactive teaching it offers. The most commonly used interactive tools in the Moodle system are: UCL Connected Learning Baseline; Discussion Forums, Glossary, H5P, Hot Question, Group Choice, Lesson, Wiki, Workshop, Collaborate, Book, Questionnaire, Activity Completion, Chat and Quiz.

Considering the purpose and application for which we use them, each of these tools has certain advantages and disadvantages that need to be known in order to make the most of them and use them in online courses.

Key Words: education; information and communications technology; interactive teaching material; moodle system; online learning

E-LEARNING FOR TEACHING AND IMPROVING ULTRASOUND AND CLINICAL SKILLS COMPETENCIES

Sanja Kupešić

Paul L. Foster School of Medicine, Texas Tech University Health Sciences Center El Paso, El Paso, Texas, USA

Corresponding author: Sanja Kupešić, sanja.kupescic@ttuhsc.edu

This presentation discusses the best practices for using virtual reality (VR) and artificial intelligence (AI) in e-Learning and simulation in healthcare. A review of the examples for incorporating VR and AI to improve ultrasound, clinical, and surgical skills competencies enables participants to understand the importance of technology-assisted training across the continuum of medical education. VR provides a realistic environment to learn and improve clinical, imaging, and surgical skills. Advantages include using realistic virtual patients and virtual instructors, quick and objective assessment of multiple students, and improved patient safety. Because AI may examine a large volume of medical images, assess patterns consistently, and save costs, it could be efficiently used for screening and initial image interpretation. Pattern recognition is useful for the rapid evaluation of patient history and the introduction of standardized management and therapeutic procedures consistent with the most current algorithms and protocols. Deep learning algorithms may be utilized to model expert clinicians' skills during patient encounters and surgeons' skills during surgical procedures. Extracted real-time haptic signals could guide instructing trainees to perform the procedure or assist supervisory physicians in providing

objective feedback. Models for intraoperative guidance based on tissue tracking are already implemented in robotic surgery, which improves instrument positioning and manipulation of surgeon novices. Computer-assisted surgery may use preoperative planning based on the patient's medical records and MR/CT surface models for optical tracking of instruments and anatomy, which is advantageous for trainees. Superposition of anatomy landmarks to real-time ultrasound images is an example of providing learners and clinicians with real-time support and guidance during ultrasound-guided procedures (e.g., regional anesthesia) to enhance precision, leading to improved clinical and patient outcomes.

Key Words: e-Learning; clinical simulation; virtual reality; artificial intelligence; ultrasound skills; clinical competency

Session C11: PATIENT AND POPULATION EDUCATION

COMMUNITY – BASED PREVENTION AND DESTIGMATIZATION: A PRACTICAL VIEW

Igor Salopek

General hospital Karlovac, Karlovac, Croatia

Corresponding author: Igor Salopek, igor.salopek@bolnica-karlovac.hr

The lifelong prevalence of psychiatric disorders in the general population is twenty-five percent. At the same time, it is mostly about conditions from the anxiety-depressive spectrum and the spectrum of addiction. Timely recognition, as well as adequate multidisciplinary professional interventions, enable better outcomes of treatment and recovery. Therefore, prevention, health literacy programs and destigmatization of people with psychiatric disorders are essential and necessary activities in the community with the aim of mentally empowering society and individuals. The Integrative Centre of Mental Health was founded in Karlovac in 2017, and represents a platform for a range of programs, projects, campaigns and activities for the promotion and protection of mental health and public health. On the other hand, by developing the concepts of community-based psychiatry, the best approaches to people with experience of psychiatric disorders are possible.

Key Words: mental health; health literacy; destigmatization

PUZZLES OF HEREDITY: EDUCATING CHILDREN IN GENETIC LITERACY THROUGH INTERACTIVE WORKSHOPS

Nina Pereza¹, Mia Radošević²

¹ Department of Medical Biology and Genetics and Centre for Genetic Education, Faculty of Medicine, University of Rijeka, Rijeka, Croatia

² CroMSIC, Faculty of Medicine, University of Rijeka, Rijeka, Croatia

Corresponding author: Nina Pereza, nina.pereza@uniri.hr

Puzzles of Heredity is a project conducted since 2021 by the Centre for Genetic Education at the Faculty of Medicine in Rijeka and CroMSIC – Croatian Medical Students' International Committee. The workshop is intended for children of preschool and early school age (grades 1–4), and the aims are to introduce children to the hierarchical structure of the human body, as well as the basic concepts of genetics and principles of inheritance, and raise awareness in children about the importance of respecting differences between humans and other living beings. The workshop is conducted by genetic educators from the Centre for Genetic Education, as well as specifically trained student genetic educators from CroMSIC. Genetic educators use different types of educational materials for the workshop, including a picture book and three didactic toys, which were designed by a preschool teacher, Montessori pedagogue.

The Puzzles of Heredity workshop encourages the development of genetic literacy in children from an early age, enabling the acquisition of knowledge about basic genetic concepts, developing positive attitudes towards the appreciation of differences between living beings, as well as developing respect for life in general. Genetic diseases are not exclusively rare diseases and low levels of genetic literacy among healthcare professionals and the general population are the main cause of discrimination and mistreatment of people who are born “different”. Therefore, increasing genetic literacy in children is of the utmost importance because knowledge is the only way to release fear and development of negative attitudes.

The aim of this lecture is to present the aims, concept, results and significance of conducting the Puzzles of Heredity workshop in children of preschool and early school age. In addition, the aim is to emphasize the important role medical educators and medical students have in the transfer of highly specific knowledge to the general public.

Key Words: medical education; genetic education; medical students; genetic literacy

Concurrent Session C13A: MOBILITY AND INTERNATIONALIZATION

INTERNATIONALIZATION OF MEDICAL STUDY PROGRAMS

Lara Batičić, Vlatka Sotošek

University of Rijeka, Faculty of Medicine, Rijeka, Croatia

Corresponding author: Vlatka Sotošek, vlatkast@uniri.hr

“The art of medicine consists in amusing the patient while nature cures the disease”, the famous writer and philosopher Voltaire once said. In order to heal patients, the key is to educate future medical doctors that will be capable of integrating different aspects of medicine and education. Accordingly, the main vision of the Faculty of Medicine Rijeka is internationalization as one of the most powerful ways to create a world without borders, a world where medicine knows no frontiers. With its scientific, professional, and general intellectual capacity, based on tradition and continuous development, the Faculty of Medicine Rijeka is an important factor on the biomedical map worldwide. We widely open new doors of cooperation and partnership with the international academic community by promoting the input and output of scientific and educational mobility and rapid flow of information, education, and ideas. Our mission is to educate, inspire, and encourage future physicians to create a better and healthier world focused on humanity and altruism. Internationalization is a bridge that connects people to the world of science and education. Since the academic year 2017/2018, the Faculty of Medicine at the University of Rijeka introduced the University integrated undergraduate and graduate study program of Medicine in English. Today we count more than 250 students from different parts of the world, including many European countries, the United States, Canada, the United Kingdom, China, Africa, Brazil, the Middle East, and many others, who study together and grow as a unique part of the educational process, constantly expanding our horizons and international visibility.

Key Words: Education; Internationalization; Medical Studies; Mobility

TEACHING PHARMACOLOGY FOR LEARNING IN PRACTICE IN MEDICINE & PHARMACY DEGREES

Maria Cecilia Giron¹, Giuseppe Scarsi², Barbara Gatto¹, Stefano Moro¹, Girolamo Calò¹

¹Department of Pharmaceutical & Pharmacological Sciences, University of Padova, Italy

²International Mobility & Relationships Service, University of Padova, Italy

Corresponding author: Maria Cecilia Giron, cecilia.giron@unipd.it

The International Student Mobility has become a feature of higher education policy across all disciplines. Due to increasing individual tourism and migration, physicians and pharmacists progressively require intercultural skills in their home country. The University of Padova (UniPD) has various international student mobility initiatives. Overall, 80% of outgoing and incoming students come under the Erasmus+ Studio, Erasmus+ Traineeship, Erasmus Mundus and Arqus schemes, or bilateral agreements. In 2016–2017 compared to other Italian Universities, UniPD ranked second for its proportion of outgoing students (2.8%) and third for incoming (2.2%). With the about 200 Erasmus cooperation agreements, the number of incoming students has increased constantly from 4.9% to 7.5% in UniPD Medicine and Pharmacy Courses between 2019 and 2023. In this respect, the PhD program in Pharmacological Sciences strongly promotes international exchanges, with about 35% of graduate students' participation on the different initiatives. In parallel, the UniPD Department of Pharmaceutical & Pharmacological Sciences (DPPS) has organized various international summer programs (ISPs) for medical and pharmacy students with the financial support from UniPD Internalization Program and scientific nonprofit organizations. These ISPs are characterized by clinical sessions on drug information, healthcare delivery and patient cases as well as scientific sessions on pharmacological mechanisms and drug design. The main topics ISPs ranged from *Drug misuse and related clinical and toxicological issues to Theranostic Radiopharmaceuticals for Implementing Precision Medicine*, highlighting the pharmacological mechanisms and drug effects from scientific and clinical perspectives. One virtual ISP, denominated *MINDinGUT*, was launched during COVID-19 pandemic which enrolled over 65 young participants from the four continents, interested in understanding research on the microbiota-gut-brain axis. These different mobility initiatives trigger innovative effects on medicine & pharmacy education and clinical practice offering the opportunity of sharing ideas on an international level and helping students in their professional careers.

Key Words: education; mobility; pharmacology; clinical practice; scientific perspectives

Session C14: CURRICULUM DESIGN & INTEGRATION

LESSONS LEARNED FROM CURRICULUM REDESIGN

Thomas DeFer

Washington University School of Medicine, St. Louis, USA

Corresponding author: Thomas DeFer, tdefer@wustl.edu

Washington University school of Medicine in St. Louis, Missouri has undertaken a major curriculum renewal over the past 4 years. The recommendations of the so-called Flexner 2.0 report were incorporated into the curriculum design, one of the most important is curricular integration. The review describes the methods of integration incorporated in a horizontal and vertical fashion. Each of the three phases is described as well as the integration components in each phase.

Key Words: education; curriculum; integration

CHALLENGES IN IMPLEMENTING CLINICAL ROTATIONS AT THE UNIVERSITY OF SPLIT SCHOOL OF MEDICINE

Renata Pecotić

University of Split School of Medicine, Split, Croatia

Corresponding author: Renata Pecotić, renata.pecotic@mefst.hr

The core curriculum of the University of Split School of Medicine (USSM) sets the standards for knowledge, skills, and attitudes that medical students should acquire. Clinical rotations as the final act of acquiring clinical skills at the USSM consist of four courses: Emergency (3 ECTS); Internal Medicine (5 ECTS); Surgery (5 ECTS); and Mother and Child (5 ECTS), and are organized in the sixth academic year involving 540 hours. In a group of two, students spend time in outpatient clinics of the University Hospital of Split, the Emergency Department of Split-Dalmatia County, and on other teaching bases. A traditional rotation involves a supervising faculty member (mentor) making assignments and working with a limited number of medical students. Students work as part of the medical team and actively participate in diagnosing and treating the patient by applying the knowledge they have acquired and improving their clinical skills to enable them to practice independently. In addition, students participate in interactive seminars where they are expected to apply their knowledge in managing clinical cases. Seminars are organized in the form of problem-based learning (PBL). Finally, the formative OSCE with immediate feedback is performed at the end of the Clinical rotations to evaluate students' clinical competence when taking the history, performing the physical examination, and in clinical reasoning. Internal SWOT analysis performed following the student's survey revealed that acquisition of skills and knowledge in small groups of students, thorough familiarization with the hospital treatment protocol of the patient, a unique opportunity for the student to participate actively under the supervision of the mentors in the patient care in different clinical scenarios, and flexibility of performing practical from clinical rotations that do not require additional material costs for the USSM and/or the University Hospital of Split are the main strengths. On the other hand, mentors are not paid for this work, and they are overloaded with regular clinical work. Variability in the quality of clinical rotation between departments and the disproportion in duration and scope of individual components are the main weaknesses. Differences in organization of clinical skills and capacity across medical schools are acknowledged. Still, constant improvement and steps toward in clinical decision-making of future physicians become a crucial features of the core curriculum of medical schools.

Key Words: clinical skills; curriculum; medical education; medical student; OSCE

CLINICAL TEACHING IN DENTISTRY

Sonja Pezelj Ribarić

University of Rijeka, Faculty of Dental medicine, Rijeka, Croatia

Corresponding author: Sonja Pezelj Ribarić sonja.pezelj.ribaric@fdmri.uniri.hr

In the study of dentistry, teaching is organized by lectures, seminars, pre-clinical exercises and clinical exercises. Before the clinical part, students acquire skills in the preclinical exercises by working on models. Both in the preclinical and later in the clinical part, the work task is important because it forms the basis for the learning process and stimulates further learning.

Three people are involved in this process: the patient, the student, and the teaching clinician.

In this process, the student must acquire theoretical knowledge, the ability to perform clinical examinations and communicate with patients, receive comprehensive dental education that can be applied in all areas of clinical dentistry, and collaborate with other health professionals in solving everyday dental cases.

While working on clinical cases, students are exposed to a typical or common problem, acquire new knowledge about a previously known problem, and sometimes have the opportunity to encounter a rare problem in dental casuistry.

In the sixth year of study, they deepen their skills in the context of professional practice in cooperative institutions of the faculty, where they meet and work on various case studies The Doctor of Dental Medicine is

qualified to engage in activities involving the prevention, diagnosis, and treatment of anomalies and diseases of the mouth, oral cavity, and associated tissues.

In small learning groups, student teams examine real patient cases that represent key concepts in the curriculum. The cases represent typical clinical scenarios they will encounter in their 3rd and 4th years of study and throughout their dental careers. This learning approach helps students develop valuable critical thinking and problem solving skills that are in high demand in today's health care professions.

Key Words: clinical; dentistry; teaching

HOW TO WRITE A STUDY PROGRAM?

Daniela Malnar

Faculty of health studies, University of Rijeka, Rijeka, Croatia

Corresponding author: Daniela Malnar, daniela.malnar@uniri.hr

When creating new study programmes, we need to take into account the programme's compatibility with the labour market. When we know the needs of the labour market, we start creating a study programme whose learning outcomes are the basis for key jobs within the health system. The study programme should be in accordance with the qualification standard of the Croatian Qualifications Framework (CQF), which clearly defines the learning outcomes and competencies a person must have. Learning outcomes are the basis for creating occupational standards and qualifications, and they are acquired by mastering the material. Competencies are shown through the knowledge and skills that a person acquires upon completing the study programme. Learning outcomes and competencies often overlap, which is especially the case in health professions.

The study programme must contain learning objectives and outcomes that ultimately lead to a qualification of a certain level. Imprecise verbs are used to describe the course's objectives (to have the knowledge, to learn, etc.). The American psychologist Bloom defined three areas of intellectual behaviour during learning, and he systematised each area from the lowest to the highest level of knowledge acquisition. Active verbs of levels 4 and 5 of Bloom's taxonomy, which correspond to level 5 of CQF, are used for the purpose of creating learning outcomes, while verbs of level 6 of Bloom's taxonomy correspond to levels 6 and 7 according to CQF. When creating the study programme, it is necessary to define about 20 learning outcomes of the study programme, which must be linked to the learning outcomes of each individual course. When describing each course, 4 to 10 expected learning outcomes must be specified (the number of learning outcomes depends on the teaching load of the course), at least one of which must be related to the learning outcomes of the study programme. Every outcome must be measurable and verifiable.

Key Words: Bloom's taxonomy; learning outcomes; study program

AS INTERDISCIPLINARY AS IT GETS – THE ROLE OF MEDICAL DOCTORS AS TEACHERS IN SPEECH AND LANGUAGE PATHOLOGY STUDIES

Maja Kelić

University of Rijeka, Speech and Language Pathology Studies, Rijeka, Croatia

Corresponding author: Maja Kelić, maja.kelic@uniri.hr

Speech and language pathologists (SLPs) provide treatment, support and care for children and adults who have difficulties with communication, hearing, or with eating, drinking, and swallowing. In most countries SLPs are allied health professionals guided by the idea and mission immanent to medicine: therapy is an attempted remediation of a health problem, usually following a medical diagnosis. Speech and Language Pathology is however, immensely interdisciplinary field that encompasses a wide range of disciplines: from linguistics, phonetics and acoustics, to psychology, education and number of medical disciplines as neurology, otorhinolaryngology or genetics. This makes the discipline particularly attractive, but also challenging when it comes to creating a pro-

gramme of study. This presentation will highlight some of these challenges, but also advantages and distinctives the programme comprises. Particular emphasis will be placed on the role of medical doctors as teachers in Speech and Language Pathology Studies and opportunities for knowledge transfer between disciplines, in both directions.

Key Words: education in allied health professions; speech and language pathology; study programmes

Session C17: QUALITY IMPROVEMENT IN MEDICAL EDUCATION

INSTITUTIONAL FRAMEWORK FOR IMPROVING QUALITY OF L&T AT UNIVERSITY OF RIJEKA

Marta Žuvić

Vice-rector for students, studies and Quality Assurance, University of Rijeka, Croatia

Corresponding author: Marta Žuvić, marta.zuvic@uniri.hr

The quality of learning and teaching is assessed, as is customary worldwide, on the basis of the results of surveys of student satisfaction with the teaching and teachers after completion of the courses. UNIRI has long gone beyond this and conducts regular and comprehensive surveys of recent graduates at all levels (Bachelor, Master and PhD), as well as surveys of academics and administrative staff, the results of which are used as a basis for decisions to introduce measures to improve not only the quality of L&T and student satisfaction, but also measures to improve the skills and competences of students, academics and support services. In this context, UNIRI launched the UNIRI CLASS programme in 2021, which consists of 5 project lines with the sole objective of supporting all education stakeholders to achieve the University's strategic objectives in L&T. The project lines are: A1. Open personalised education (development of subsidiary subjects / micro-credits offered as electives within the study programme or the LLL programme), A2. Digital Society – Innovations in L&T (developing innovative applications of digital tools and pedagogical approaches for L&T), A3: Practical Skills for the Future (developing an industry-academia network for co-supervision of 3–6-month internships), B: Student Wellbeing (supporting student counselling centre services – psychological support, career counselling) and C. UNIRI – Coursera partnership in L&T. All project lines have started and the results will be presented.

Key Words: Quality of L&T; Innovations in L&T; Strategic objectives in L&T