

**H E P M P**

HIGHER EDUCATION PAIN MEDICINE PROJECT

Comparative analysis  
on education offer in pain  
medicine in Italy  
and partner countries



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## List of Abbreviations

CBHE	Capacity Building in Higher Education
D&E	dissemination and exploitation
EACEA	Education, Audiovisual and Culture Executive Agency
EC	European Commission
EU	European Union
GA	Grant Agreement
HCWs	Health Care Workers
HE	Higher Education
HEI	Higher Education Institution
HEPMP	Higher Education Pain Medicine Project
LLL	Life Long Learning
NEO	National Erasmus+ Office
PA	Project Adviser
PA	Partnership Agreement
PC	Project Coordinator
PCC	Partner Country Coordinator
PCs	Partner Countries
PCT	Partner Country Team
PgCC	Programme Country Coordinator
PgCs	Program Countries
PgCT	Programme Country Team
PM	Pain Medicine
PMB	Project Management Board
QCB	Quality Control Board
TL	Task Leader
TLs	Task Leaders
UB	Faculty of Medicine University of Belgrade, Belgrade, Serbia
UBBL	Faculty of Medicine University of Banja Luka, Bosnia and Herzegovina
UF	Faculty of Medicine University of Florence, Italy
UHDM	University Clinical Hospital Centre "Dr Dragisa Misovic-Dedinje" Belgrade, Serbia
UK	Faculty of Medical Sciences University of Kragujevac, Kragujevac, Serbia
ULj	Faculty of Medicine University of Ljubljana, Slovenia
UP	Faculty of Medicine University of Podgorica, Montenegro
UR	Faculty of Medicine University of Rijeka, Croatia
UT	Faculty of Medicine University of Tuzla, Bosnia and Herzegovina
WP	Workpackage

## I About the HEPMP project

### 1.1 The HEPMP project summary

**Funding:** Erasmus+

**Key Action:** KA2 Capacity Building in Higher Education

**Type of project:** Joint Projects

**Coordinating Institution:** University of Belgrade

The main aim of HEMP project is to increase quality of education in pain medicine in order to contribute to the improvement of public health care services and PCs in line with the Health 2020. In Serbia, Montenegro and Bosnia and Herzegovina there is a significant problem of large percentage of the population who suffers from cancer, rheumatic and neurological diseases, while education in the field of pain medicine is insufficient. In fact, one of the priorities of the strategy Health 2020 improvement of the quality of medical services and continuously adapt to changing patterns of disease. Aim of this project is developing an interdisciplinary program in Pain Medicine at the under / postgraduate studies by applying new methodologies and specific learning outcomes in partner country universities. The introduction of the modernized study program of pain medicine is important for improvement of the quality of higher education that will contribute to improve the health care of the population. Moreover, one of the aims is establishment of academic network that would allow the exchange of knowledge of HCWs in Serbia, Montenegro and Bosnia and Herzegovina. The main tool of this network would be development of educational PAIN REGION WB Network which will enhance regional cooperation and education of pain medicine of all partner country universities.

Also, one of the HEPMP aims is delivering of trainings of pain medicine in order to increase skills and competences of health care workers (HCW) in PCs . Training would be for the two target groups: the first type of courses would be for HCWs who work in primary health care centres and daily dealing with the management of pain medicine, and other types of courses would organized in the form of highly specialized training for interventional treatment of pain for doctors who work in tertiary institutions. During the project will form the learning material in the form of brochures for courses and textbooks on pain.

## 1.2 The HEPMP project consortium

No	Institution	City	Country
1	University of Belgrade	Belgrade	Serbia
2	University of Kragujevac	Kragujevac	Serbia
3	University of Tuzla	Tuzla	Bosnia and Herzegovina
4	University of Banja Luka	Banja Luka	Bosnia and Herzegovina
5	University of Montenegro	Podgorica	Montenegro
6	University of Florence	Florence	Italy
7	University of Ljubljana	Ljubljana	Slovenia
8	University of Rijeka	Rijeka	Croatia
9	KBC Dr. Dragisa Misovic-Dedinje	Belgrade	Serbia

## 1.3 The HEPMP Managing Board

No	Name and Last Name	Institution
1	Prof. dr <i>Predrag Stevanović</i> ,	University of Belgrade, <b>Project Coordinator</b>
2	Prof. dr Jasna Jevđić	University of Kragujevac
3	Prof. dr Vladimir Đukić	KBC dr Dragiša Mišović
4	Prof. dr Danko Živković	University of Montenegro
5	Prof. dr Jasmina Smajić	University of Tuzla
6	Prof. dr Darko Golić	University of Banja Luka
7	Prof. dr Anđelo Rafele De Gaudio	University of Florence
8	Prof. dr Maja Šoštarić	University of Ljubljana
9	Prof. dr Željko Župan	University of Rijeka

## **II Comparative analysis on education offer in pain medicine in programme and partner countries**

At the University of Florence, the six years Medicine degree course classes were involved in different lessons to increase future clinicians' knowledges and attention on pain management in medical practice. The Anesthesia Department of Florence University organized these lessons focusing the attention on different topic from biological and anatomical pathway on pain development, transmission, amplification and chronicity to organ-functional complication, specialized treatment involving and psychological/social implication in pain management.

Analysing curricula of Integrated undergraduate and graduate university study Medicine in Florence, we concluded that education in Pain Medicine is part of these subjects:

- **Biochemistry and Pharmacology** – during the lectures, students get known with molecular organization of cells and extracellular matrix. DNA, chromosomes, RNA, protein synthesis, cell cycle, mitosis and meiosis, signal transduction with a particular interest in pain pathways. Furthermore, students get known with pharmacodynamics and pharmacokinetics of non-opioid and opioid analgesics so as with pharmacodynamics and pharmacokinetics of local anesthetics. These learning aspects should also include indications, contraindications, side effects and toxicity of above-mentioned drugs. Major objective thus should be to provide the pharmacological basis of therapeutics, including toxicology and drug addiction. Medicines representative of therapeutic classes, especially analgesics, were illustrated for their chemical nature, pharmacological action(s), mechanism(s) of action, therapeutic indication(s), pharmacokinetic characteristics, efficacy, safety, adverse reactions, toxicity, contraindications, drug interactions, doses and administration route.
- **Anatomy, physiology and pathophysiology** – introduction to pain physiology and neurophysiology to the students, with specific attention to nervous tissue micro-anatomy, pain mediators their structure and action This is important because the knowledge gained during this course is the basis for further understanding of the concept of pain and its treatment. Furthermore,



during the lectures, students get known with neural networks, organized in sensorial, motor and associative systems, with particular regards to pain signals genesis, transmission and central elaboration. The approach of the study was integrative, ranging from how whole organs work and interact to control body functions, down to the molecular mechanisms operating within cells. A major focus of the course was on the different techniques developed by modern biological and medical research.

- Internal medicine and surgical clinics - during this subject, students learn about the diseases and conditions that lead to pain. In the first meeting with the clinical practice, students can examine the patient, set up a working diagnosis, and present their treatment views that also includes pain management. In these clinician topics study, particular attention should be paid in improving each study field with focus on pain specialized topics. In this setting students have lessons on: cardiovascular disease with particular attention on cardiac thoracic pain; respiratory medicine allowing the comprehension of the etiology of the pathophysiologic changes and of the relative clinical expressions of lung diseases, such as pain symptoms originating from lungs and airways; rheumatic disease (rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis, crystal arthritis, systemic lupus erythematosus, systemic sclerosis, polymyositis dermatomyositis, fibromyalgia, Sjogren Syndrome, rheumatic polymyalgia, antiphospholipid syndrome, reactive arthritis, vasculitis) with a particular interest in their painful manifestations; medical oncology for a correct diagnostic clinical and therapeutic approaches to more common solid tumors observed in ambulatory and hospital practice with a particular focus on oncological acute and chronic pain. These students had also lessons on surgical diseases (breast, esophagus, stomach, colon-rectum, liver, biliary tract, pancreas, lung, endocrine diseases), post-operative complications (peritonitis, bowel occlusion, etc), different kind of surgical pain evaluation and treatment.
- Neurology - learning about peripheral nervous system diseases including the neuralgias of different nerves on the head and neck, and so as the headache. Neuralgia and headache are known as one of the leading diagnosis in the field of pain medicine and its treatment.
- Oncology – this course is based on learning about the patient with the malignant disease. Some of the malignancies lead to cancer pain which is chronic, and usually very strong so students get known with some basic

- management approaches to chronic pain using opioids and transdermal patches.
- Rehabilitation medicine – students get acquainted with the methods of physical therapy as a nonpharmacological approach to pain treatment. Lectures on therapy for the treatment of painful muscular and skeletal diseases, motor rehabilitation and physiotherapy in patient with not surgical back pain should be implemented.
  - Family medicine – includes a holistic approach to the patient and learning about acute and chronic pain management in basic knowledge and clinical practice. The following lectures should be implemented: anesthesiology, intensive care medicine and pain therapy provided to surgical patients, critical ill or end- of-life patients; neurological syndromes with cognitive impairment, behavioral disorders, autism spectrum disorders, epilepsies and dyskinetic frameworks, neurogenic pain syndromes and pain sensibility alterations; physiology and main pathologies in obstetrics and gynecology, obstetrical and gynecological causes of abdominal pain; pediatrics topics for the correct management of the newborn, child, and adolescent in physiological and pathological conditions, focusing on the most frequent disorders in the pediatric age and their painful symptoms in children; medicine and semeiotical surgery to improving students ability in collecting the medical history and conducting the patient's objective examination, including the correct evaluation of different pain expressions.

Based on the mentioned lectures as a part of curricula which include Pain Medicine management, we can say that we are side by side with some universities of the project where the pain is also introduced in this learning lectures. This can be attributed to the Bologna process introduced among medical studies in Europe. The advantage of our faculty is more knowledge about the pain that is introduced to students through the clinical practice in emergency rooms and family medicine practices in the last year of the Integrated study of Medicine. Through this way of education, they gain a better foundation for further acquaintance in the field of Pain Medicine.

The post-graduate study in Pain Medicine at Faculty of Medicine in Florence is implemented as a part of a postgraduate specialist study for the residents of Anesthesiology, Resuscitation and Intensive Care Medicine. This post-graduate

specialist study consists of 5 years including mandatory and elective subjects. The post-graduate study in Pain Medicine does not exist as a separate program study but the students can take lessons of Pain Medicine through the elective subject. Comparing this knowledge with other post-graduate studies such as in Bosnia and Herzegovina, Serbia, and Montenegro we conclude that in comparison with University in Banja Luka we have longer education about pain medicine in specialist training; they have only one month of education. Comparing with the University of Banja Luka and Tuzla we can say that we have better post-graduate study because our specialist study includes also mandatory and elective subjects which are part of Pain Medicine management. At the University of Podgorica, there are no classes organized in the field of Pain Medicine. Pain management is implemented only through palliative care in the graduate course of Family Medicine. Based on this information, we think that we have much more progress in Pain Medicine comparing with Montenegro. At last, comparing with Serbia, we can say that there is still much ahead of us.

Differently from other universities, at the University of Florence a second level Master on pain therapy was introduced during the 2017 for physician specialized in anesthesiology, neurology, geriatrics, oncology, radiotherapy, pediatrics, internal medicine or physician with at least three year of work in pain management filed. The aim of the course was the training of doctors who can carry out professional activities in public and private health facilities. This master had a duration of 12 month and had started the 27 of January; 15 specialists were enrolled in this program. The master began with lessons on the anatomy of pain particularly to neuroanatomy of nociception, anatomy of pain pathways and psychological involvement in acute and chronic pain. During this first part of the course particular attention had been made on specific fields like: pain and the pathophysiology of peripheral nerve damage; pain and neuroplasticity; differences in deep, visceral, inflammatory and neuropathic pain; neurophysiology of acute and chronic pain and neurobiology of pain in infants and children; development of painful pathways and pain mechanisms. In the second part of this course was focused on pain assessment, clinical evaluation and scoring of pain, pain management (pharmacotherapy of pain with particular reference to the class of analgesics and mechanism of action). In this part of the course different pain aspect were deeply analyzed: basics of cancer pain (etiology, classification, assessment and therapy); noncancer pain (particularly acute and postoperative pain), pain management in intensive care units; symptomatic locomotor disease (osteoarthritis, rheumatoid

arthritis); neuropathic pain (back pain, neck pain and pain in the upper extremities...). The last part of this master analyzed social and psychological consequences of pain with particular attention on no-pharmacological supports for patients and patients' family with chronic pain.

In the field of Pain Medicine, there are different training events that are organized in Italy: ITALIAN ASSOCIATION FOR STUDY OF PAIN; MILAN, NIGUARDA HOSPITAL, PAIN DISEASE AND TERRITORIAL NETWORK; "Law 38/2010 Can we live without pain?", NATIONAL ITALIAN SOCIETY OF PALLIATIVE CARE CONGRESS, THE VALUE OF CHOICES; Italian Society of Anastasia, Analgesia and Intensive Care, National Congress; NATIONAL CURE CONGRESS, Diseases without pain; Course of pain therapy "Acute and chronic pain: from research to the clinic", THE NEW FRONTIERS OF THERAPY OF PAIN, (those in family medicine). This congress combines theoretical and practical knowledge through the interactive workshops that are performed on cadavers. Comparing our education with education, in the first line with Serbia, and also with Bosnia and Herzegovina, and Montenegro, we can say that we have more training events that are based on the practical treatment of pain. We are based on ultrasound-guided techniques of pain management, such as different workshops on the cadavers. We think that intervention therapy is a field in which we can educate other colleagues from partner countries. In contrast, we need more education about pharmacological pain treatment, especially in the field of chronic pain management including palliative care. A good example is the Belgrade International Symposium on Pain that was held in May 2017.

Strengthening Capacities for Higher Education of Pain Medicine in Western Balkan  
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