

**H E P M P**

HIGHER EDUCATION PAIN MEDICINE PROJECT

The analysis of education  
offer in pain medicine in  
Serbia



Project title	Strengthening Capacities for Higher Education of Pain Medicine in Western Balkan countries
Project acronym	HEPMP
Project reference number	585927-EPP-1-2017-1-RS-EPPKA2-CBHE-JP
Coordinator	University of Belgrade
Project start date	October 15, 2017
Project duration	36 months

Reference no and title of work package	WP1 Comparative analysis of education offer in Pain Medicine
Institution	The University of Belgrade
Author(s)	Academician Prof. Dr. Dragan Micic, MD, PhD Prof. Dr. Dejan M. Nestic, MD, PhD Prof. Dr. Predrag Stevanovic, MD, PhD Dr. Sandra Radenkovic MD, PhD
Document status	Final
Dissemination level	Public

Project number: 585927-EPP-1-2017-1-RS-EPPKA2-CBHE-JP (2017 - 3109 / 001 - 001)

This project has been funded with support from the European Commission.  
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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 The analysis of education offer in pain medicine in Serbia

At the Faculty of Medicine University of Belgrade, a new specialization in Pain Medicine was introduced in the academic year of 2013/2014. Up to this date, 55 specialists were enrolled in this program, with 10 of them completing and defending their final thesis in public.

Winter semester began with introducing lecture committed to instructions for final research paper in the field of sub specialization of Pain Medicine and introducing with National clinical guideline of good clinical practice, for the diagnosis and treatment of chronic cancer pain. The following lessons in the subspecialty dedicated to the anatomy of pain - particularly to neuroanatomy of nociception and anatomy of pain pathways. Following lectures are very important part of Pain Medicine sub specialization because they are dealing with physiology of pain. These lectures are: Theories of Pain and the Pathophysiology of peripheral nerve damage; Pain and neuroplasticity: The role of dorsal roots; than Deep, visceral, inflammatory, neuropathic pain; Neurophysiology of acute and chronic pain and Neurobiology of pain in infants and children; development of painful pathways and Pain mechanisms. These lessons are important for every doctor, because the knowledge of the pathophysiology of pain is necessary in clinical work, regardless of the specialization. The last part of lectures represents Assessment of Pain. In these important lectures we evaluate importance of pain assessment, clinical evaluation of pain, types of pain questionnaires and pain scales. Also, the particular feature of the part of lectures is lecture on paediatric and neonatal scales of pain, due to the small number of doctors known to exist of that scale.

The fifth part of sub specialization is part of lectures dedicated to management of pain. In this part, lectures elaborate Pharmacotherapy of pain with particular reference to the class of analgesics and mechanism of action. The main objective of these lectures is to meet doctors with clinical use of opioids, dependence and opiophobia, use of antidepressants and anticonvulsants. The special lecture of this part is a lecture dealing with placebo and placebo effects.



First part of lectures in summer semester is dedicated to cancer pain, considering the huge number of people suffering from it. In these lectures we represent basics of Cancer Pain Therapy, radiotherapy, chemotherapy and hormone therapy in pain management. Also, in this section we evaluate ethology, classification and assessment of cancer pain. Following lessons are committed to non-cancer pain, particularly acute and postoperative pain, and pain management in intensive care units. A special part of the lesson is devoted to osteoarthritis and rheumatoid arthritis, since the pain as a symptom is very prevalent in these diseases. Back pain, Neck pain and Pain in the upper extremities is also introduced through this part of lectures. In the third part of summer semester we evaluate Headaches and its epidemiology, classification and clinical presentation. The next part of the lesson is devoted to neuropathic pain, which nowadays represents the pain most difficult to treat. Obstetric Pain is also evaluated through lessons. Furthermore, in summer semester, we evaluate Epidemiology of pain and methodology in research, related to pain medicine, aimed to introduce doctors with questionnaire construction and analytical studies. The last lectures are dealing with legal framework of Pain and Palliative medicine.

During 2017 (and previous years), the problem of pain was discussed at various meetings, continuing education programs, professional meetings, congresses and forums. The following are the lists of meetings that were dedicated to the problem of pain or the pain is considered as a part of the meeting.

Serbian Medical Association - Intersection Pain Committee held an expert meeting in Belgrade on March 17, 2017, entitled "Neuropathic Pain Treatment". On this Intersection Pain Committee talked about that neuropathic pain can be caused by a number of different diseases (e.g., diabetes mellitus, herpes zoster, human immunodeficiency virus [HIV] infection), medical interventions (e.g., chemotherapy, surgery), and injuries (e.g., brachial plexus avulsion). It has been defined as "pain arising as a direct consequence of a lesion or disease affecting the somatosensory system". Also, it has been shown that neuropathic may impair patients' overall health-related quality of life (HRQOL), including important aspects of physical and emotional functioning such as mobility and ability to work. It also generates substantial costs to society. Treatment of neuropathic pain is challenging. Especially since it is particularly underlined, compared with patients with non-neuropathic

chronic pain, where patients with neuropathic pain seem to have higher average pain scores and lower HRQOL (even after adjusting for pain scores); to require more medications; and to report less pain relief with treatment. In randomized clinical trials (RCTs) assessing efficacious medications for neuropathic pain, typically 50% of patients experience satisfactory pain relief, and side effects (including inability to tolerate treatment) are common. In real-world settings, several cross-sectional studies have found that patients with neuropathic pain continue to have pain of moderate severity. It is likely that a major part of the reason for these findings is generally poor pain management – patients with neuropathic pain are usually not prescribed medications with demonstrated efficacy for their condition, and when they do receive appropriate treatment (e.g., tricyclic antidepressants [TCAs] or gabapentin), they receive dosages that are, on average, far below the dosages with demonstrated efficacy in RCTs.

On March 30, 2017, a professional association of the health profession “Pharmed”, held an expert meeting in Belgrade, entitled “Opioid analgesics in the Chronic Cancer Pain Treatment”. On this scientific meeting, it was discussed that cancer pain is generally treated with pharmacological measures, relying on using opioids alone or in combination with adjuvant analgesics. It was spoken that weak opioids are used for mild-to-moderate pain as monotherapy, or in combination with non-opioids. Also, for patients with moderate-to-severe pain, strong opioids are recommended as initial therapy, rather than beginning treatment with weak opioids. It was shown that adjunctive therapy plays an important role in the treatment of cancer pain, not fully responsive to opioids administered alone (i.e., neuropathic, bone, and visceral colicky pain). Supportive drugs should be used wisely to prevent and treat opioids’ adverse effects. It was shown that doctors must understand the pharmacokinetics, pharmacodynamics, interactions, and cautions with commonly used opioids can help determine appropriate opioid selection for individual cancer patients. Each step of the WHO analgesic ladder (i.e., non-opioids, weak opioids (analgesics for mild-to-moderate pain), and strong opioids (opioids for moderate-to-severe pain intensity) may be accompanied with adjuvant analgesics (co-analgesics), which can enhance opioid analgesia. In patients with bone pain, it is suggested that opioids may be combined with NSAIDs, glucocorticoids, and bisphosphonates, along with local or systemic radiotherapy. In patients with very severe neuropathic pain, a

combination of opioids and N-methyl - D-aspartate (NMDA) - receptor antagonists (eg, ketamine) is recommended.

On April 11, 2017, an expert meeting was organized by the Clinical Hospital Center Zemun, entitled “Chest Pain - Differential Diagnosis, Diagnostic and Therapeutic Algorithms”. During this professional and scientific symposium, it was discussed about chest pain, pain in the ribs due to metastases and special painful syndromes, such as malignant brachial pleosopathy, Pancoast tumors, upper hollow vein compression syndrome, bone metastases with various complications, platinum peripheral neuropathies with distal pain paresthesias and sensory loss etc. The diagnosis of lung pain was also discussed, since sometimes it can be very difficult to distinguish it, due to the variety of causes of pain and clinical manifestations, but almost always imaging methods are necessary, CT or MR, as a first step. It was also discussed at this meeting about the method of treatment (analgesic treatment), which is mainly based on the use of opiates, anticonvulsant or antidepressant. More complex strategies, such as intervention procedures, are rarely needed and require appropriate patient selection. It has been shown that chest pain therapy includes the use of opiates, local anaesthetics, or combinations thereof that will be applied through spinal, epidural or intrathecal, as well as various intervention procedures.

The branch of Serbian Medical Association in Kraljevo held an expert meeting there on April 27, 2017, entitled “Pathophysiology and treatment of the most common mixed pain conditions with the neuropathic and nociceptive components”. During this professional and scientific meeting, the pathophysiology of neuropathic and nociceptive pain was discussed. It has been shown that nociceptive pain is caused by actual or potential tissue damage and occurs when specific receptors, nociceptors, are exposed to harmful stimulus (chemical, thermal or mechanical irritation), and that neuropathic pain is the result of a lesion or disease that involves the somatosensory part nervous system. Therefore, while nociceptive pain has a positive, protective role, because it causes a reflex that ensures that tissue damage is minimized, neuropathic pain is characterized by the development of pathophysiological changes, regardless of the initial event that caused the pain, and does not have a protective role, but causes suffering and adverse effects for the quality of life. It was emphasized that neuropathic pain is a chronic flow and that it is very poorly responding to the usual analgesic therapy. Studies show that neuropathic pain is not the result of a pathophysiological mechanism but is the ultimate product of damage to numerous

peripheral, spinal and supraspinal mechanisms involved in the process of production, transmission and modulation of pain. One of the conclusions from this symposium was that the basic symptoms that indicate the neuropathic nature of pain are spontaneous pain (a painful experience without any previous stimulus) as well as an increased painful feeling of applying painful or non-painful irritation (hyperalgesia and allodynia).

The branch of Serbian Medical Association in Loznica held an expert meeting there on May 11, 2017, entitled “Chest Pain in Children - truth and misconceptions”. The main question that was discussed at this scientific meeting was: What causes chest pain in children and teenagers? A variety of factors can cause a child or teenager to feel chest pain. In most cases, chest pain in children and teenagers is not caused by a heart problem. The most common cause of chest pain in children and teenagers is chest wall pain. “Chest wall” is a term for the structures that enclose and protect the lungs, including the ribs and sternum. On this scientific meeting it was said that we do not always know what causes chest wall pain, but it is typically associated with brief sharp pain that is worse when breathing in. Injury to the ribs, sternum or other bones in the chest and back can also cause chest wall pain. There are also a variety of muscles and joints in the chest area that may be sore, inflamed or strained. Causes can include an infection or injury, such as from sports or a fall. It is concluded that typical chest wall pain is not treated with medications, although chest wall injuries and inflammation can respond to non-steroidal anti-inflammatory medications, such as ibuprofen. Otherwise, treatment for the chest pain will be dependent upon the underlying cause of the pain. Also, sometimes, a cold (upper respiratory infection) or persistent cough can cause soreness and pain in the chest area. Some children will describe acid reflux (“heartburn”) as chest pain. Stress or anxiety may also bring on a feeling of chest pain.

Serbian Pain Society organized the 12th Belgrade International Symposium on Pain from May 13-14, 2017 (the original title: Beogradski Internacionalni Simpozijum o Bolu - BISOP). BISOP had gathered 550 doctors of many specialties, mostly anesthesiologists, physiatrists, general practitioners, oncologists, neurologists and others. A total of 38 lecturers were present. The program was held in 3 plenary sessions and the Congress was opened by President of the London Pain Forum, Dr. Teodor Goroszeniuk. BISOP grew into the most important multidisciplinary regional

symposium in the field of pain medicine and was organized by the Serbian Pain Society. On that occasion, six different workshops were organized: Chronic Pain Management - challenges and opportunities; Prevention of Chronic Postoperative Pain - Myth or Reality; New Pain Management concepts - How to implement your creative vision; Neuromodulation and Pain Therapy; Pregabalin and Oxycodone in Chronic Pain Syndromes and Global Year Against postoperative pain. Over the past years, BISOP has become the most important meeting on the topic of acute and chronic pain in the region. This year's BISOP has surpassed its records, in addition to a large number of participants, this is certainly the number of posters reported by our colleagues, 16 stories related to the treatment of acute and chronic pain. An extraordinary poster of the session opened the 12th BISOP in a magnificent way. We learned how to reduce pain when applying propofol, what should be done if we perform regional anesthesia, and the patient in the region has a tattoo, how can we treat postoperative pain in a morbidly obese patient and 13 other stories.

Attractive and important for the practice, it caught the attention of our participants, from the session of applying creative vision, neuro-modulation to the importance of vitamin B and the use of capsaicin. In order to support the global fight against surgical pain, we were introduced to factors that represent a risk factor for more intensive postoperative pain, a patient controlled by analgesia, and finally we could learn to perform a relaxation exercise. It is interesting that simple regular administration of drugs after knee prosthesis surgery can significantly reduce postoperative pain and prevent the onset of chronic post-operative pain.

Participants had the opportunity to get informed about the importance of education in the field of pain therapy, new medicines, and well-known medicines, applied in an innovative way, change of practice consisting of regulated drug use and palliative care in primary health care.

Association of Physicians of Vojvodina, the branch of Serbian Medical Association in Novi Sad, held an expert meeting there on May 16, 2017, entitled "Musculoskeletal Pain and Vitamin D values in postmenopausal women". During this scientific meeting, it was especially talked about vitamin D and its important role in bone growth and maintenance, by enhancing intestinal absorption of calcium and influencing bone metabolism in other ways. Its importance in bone development has

been recognized since the late 19th/early 20th century, when rickets (osteomalacia) was widespread and was found to be controllable by vitamin D supplementation, either by sun exposure or diet. In the mid-to-late 20th century, it became evident that vitamin D inadequacy was very common among the elderly and was implicated in the development of osteopenia and osteoporosis. It is shown that Vitamin D inadequacy has also been implicated as a contributing factor to muscle weakness and musculoskeletal pain.

Association of Physical Medicine and Rehabilitation of Serbia, from May 18 - 21, 2017 organized the 17th Congress of Physiatrists of Serbia with international participation at Kopaonik with the main theme: "Diagnostically and therapeutical role of instrumental approach in medical rehabilitation". One of the main topics of the Congress was the Pain Treatment in Neurorehabilitation. The other topics were: Physical agencies up to now, Algorithms in children rehabilitation, Balneoclimatology and malignant diseases, Functional evaluation of limb amputations, Cognitive disorders in traumatic brain injury patients and Rehabilitation in seronegative spondylarthropathy patients. The prize for the best poster presentation was awarded to Sanja Ostojic for her work: Algorithm for diagnosis of cerebral palsy.

The Clinical Hospital Center Zemun held an expert meeting in Belgrade on May 30, 2017, entitled "From Diagnosis to the Treatment of Neuropathic Pain, Vertigo and Dementia". In this scientific meeting the lectures spoke that vertigo is one of the most common medical complaints and that vertigo is the feeling that you're moving when you're not. People experiencing vertigo generally describe the sensation as "feeling dizzy" or feeling as if the room is spinning. Vertigo is not the same as lightheadedness. The lectures talked especially about the diagnosis neuropathic pain vertigo and dementia.

The Association of Healthcare professionals of Zlatibor District, held an expert meeting in Prijepolje, on June 3, 2017, entitled "The Problem of Pain and its Treatment". During this training, there were words about all the problems related to differential diagnostics and the treatment of acute and chronic pain, as well as the methods for treating both acute and chronic pain.

On June 6, 2017, the Center for Palliative Care and Palliative Medicine held an expert meeting in Belgrade, entitled “Chronic Pain Treatment”. In this education it was talked about: the definition of chronic pain, treatment of general somatic pain (pain from the outer body), treatment of the visceral pain (pain from the internal organs), treatment of the bone pain, muscle spasm (muscle cramps), treatment of the peripheral neuropathy (pain arising in the nerves leading from the head, face, or extremities to the spinal cord) and chronic pain management: medications measuring the chronic pain, complications of opioids, living with chronic pain etc.

The General Hospital Leskovac held an expert meeting there on June 7, 2017, entitled “Lumbar Pain Syndrome Diagnosis and Treatment”. In this education, it was talked about acute and chronic low back pain, because acute low back pain is one of the most common reasons for adults to see a general physician in Serbia. Although most patients recover quickly with minimal treatment, proper evaluation is imperative to identify rare cases of serious underlying pathology. Lectures also talked about certain red flags that should prompt aggressive treatment or referral to a spine specialist, whereas others are less concerning. Also, our lecture stressed serious red flags including significant trauma related to age (i.e., injury related to a fall from a height or motor vehicle crash in a young patient, or from a minor fall or heavy lifting in a patient with osteoporosis or possible osteoporosis), major or progressive motor or sensory deficit, new-onset bowel or bladder incontinence or urinary retention, loss of anal sphincter tone, saddle anesthesia, history of cancer metastatic to bone and suspected spinal infection. Without clinical signs of serious pathology, diagnostic imaging and laboratory testing are often not required. On this education it was talked about the best way how to diagnose and how to treat low back pain. Although there are numerous treatments for nonspecific acute low back pain, most have little evidence of benefit.

Patient education and medications such as non-steroidal anti-inflammatory drugs, acetaminophen, and muscle relaxants are beneficial.

Serbian Medical Association, Section for Physical Medicine and Rehabilitation, held an expert meeting in Belgrade on June 8, 2017, entitled “The importance of topical treatments in multimodal treatment of painful conditions”. In this scientific meeting, lectures talked about topically applied analgesic therapies and that they have been

used throughout history to treat a variety of patient conditions that present with pain. Before modern pharmaceuticals became readily available, mud-based emollients, salves, cold therapies, and other natural remedies were often used. The lectures especially emphasized that now we have effective therapies that are developing advanced topical analgesics, as we learn more about the physiology and pathophysiology of pain. The use of topical analgesics may be associated with fewer patient systemic side effects than are seen with oral, parenteral, or trans-dermally administered agents, making the topical route of administration attractive to prescribers and patients in multimodal treatment of painful conditions. Also, they said that with further refinement of existing drugs and the development of novel agents, topical analgesics may offer relief for treating patient pain conditions that are currently challenging to treat, such as pain resulting from burns, wound debridement, and pressure ulcers. Recognizing the value of a multimodal approach, topical analgesics may offer a therapeutic option that can become part of a comprehensive treatment plan for the patient. One of the conclusions of this scientific meeting was that with continued advancements in targeted drug-delivery systems, topical analgesics may be able to provide a method to prevent or reverse the phenomena of peripheral and central sensitization. Also, the neuroplastic changes believed to be responsible for the transition from acute to chronic pain states in patients. For those patients at risk for developing chronic pain states, such as complex regional pain syndrome, the combination of cutaneous stimulation (achieved through rubbing during application) and analgesic effects produced by the drug itself may prevent the disabling pain that often emerges during the sub-acute phase of disease. The final goal of these meeting was that better utilization of currently available topical analgesics and continued research promise to ensure that topical analgesics are, and will continue to be, important tools in the treatment of patients with resistant pain.

On June 14, 2017, the Association of Physicians of Vojvodina, Serbian Medical Association, and its Section for Physical Medicine and Rehabilitation, held an expert meeting on the topic of "Myofascial Pain Syndrome - therapeutic approach". The lectures in this scientific meeting talked about the conventional definition of myofascial pain syndrome (MPS) which is characterized by regional pain, originating from hyperirritable spots located within taut bands of skeletal muscle, known as myofascial trigger points (MTrPs). Also, the lectures discussed about the common



etiologies of myofascial pain and dysfunction that may be from direct or indirect trauma, spine pathology, and exposure to cumulative and repetitive strain, postural dysfunction, and physical deconditioning. Lectures explained that there is a lack of specific diagnostic criteria for MPS. Electro diagnostic and morphological findings have been identified by the lectures; however, they cannot be practically applied in the clinical setting, due to cost and time constraints. This adds to the difficulty of definitive treatment, particularly when considering elusive underlying pathology and persistent MTrPs. On the end, the lectures underlined the variety of treatments for MPS, specifically, pharmacological treatment and noninvasive therapy are reviewed.

The National Pain Forum in Serbia was held on June 30, 2017, with “Advancement in Pain Management in Serbia” as its main goal. The National Pain Forum, initiated by Serbian physicians, was a kick-off in order to ensure better patient care. During this scientific meeting, participants discussed about four areas of primary intervention in the field of Pain Education in Serbia: undergraduate education, postgraduate education, analgesics availability and accessibility and multimodal Pain Management Treatment as part of the health care services. Also, the participants discussed about Special Aspects: Drawing a map on Serbian Pain Medicine. The first National Forum for Pain Management, under the auspices of the Ministry of Health of the Republic of Serbia, was held in the Palace of Serbia in Belgrade. This meeting was held as the first step of the long-term project of the German Ministry of Health "Advancement in Pain Medicine", coordinated by Dr. E. Dubljanin Raspopović, MD, PhD, Assistant professor and Nebojša Ladjević, MD, PhD, Associate professor, in front of the Serbian Pain Association. Besides the Project Coordinator and the Advisor to the Minister of Health of the Republic of Serbia for Foreign Relations, the meeting was attended by other relevant representatives of the Ministry of Health of the Republic of Serbia, the World Health Organization, the Agency for Medicinal Products and Medical Devices, the Association for Physical Medicine and Rehabilitation, the Association for Research and Treatment of pain in Serbia, Association of Psychiatrists of Serbia and ATOME project in Serbia. The meeting was also attended by representatives of the German Ministry of Health, the German and European Association for Pain Treatment and the ATOME Office in Bonn, Germany. At this meeting, four main goals were identified in terms of improving the pain therapy in Serbia:

1) Introduction of a compulsory course of Medical Pain within integrated academic studies at the Faculty of Medicine, University of Belgrade. At the moment, Medical Pain is taught as an elective course within the curriculum of the Department of Physical Medicine and Rehabilitation and Chair of Surgery and Anesthesia. The European trend is that Medical Pain is introduced as a compulsory subject in basic studies, which aims to enable every medical student to master the skills of treating the most common conditions of illness, regardless of his future professional orientation. It is intended that the course at the Faculty of Medicine, University of Belgrade, should be multidisciplinary at the end of the medical studies and based on the curriculum of the European Association for the Pain Relief. As a first step, the curriculum of the European Association for Pain Therapy should be introduced through existing elective subjects.

2) Improvement of Postgraduate Studies in Pain Medicine. For two years, at the Faculty of Medicine in Belgrade, there is sub specialization in Pain Medicine that can be attended by doctors of all specialties. As a step towards the improvement of existing sub specialization, a harmonization of the curriculum with the European Postgraduate Master Curriculum was proposed, the adoption of which would be a prerequisite for taking the exam and obtaining a European diploma for "Specialist in Pain Medicine". Multimodal and multidisciplinary approach is recognized as the basis for the treatment of chronic pain. In order to improve the treatment of patients with chronic pain, and also to provide a teaching base for premedia and subspecialists, the Pain Medicine Clinic has agreed to establish a multidisciplinary center for the treatment of pain within the existing ambulance for pain in KCS. The work of the center will be reflected in a complex biopsychosocial approach that implies three elements: 1) medicament therapy; 2) a structured exercise program, and

3) cognitive-behavioral techniques for the management of pain and stress. The Center will continue to be under the auspices of the Clinic for Anesthesia, Clinical Center of Serbia, but consultative examinations will be provided involving certain doctors from the Clinic for Psychiatry and the Clinic for Physical Medicine and Rehabilitation, Clinical Center of Serbia.

4) Availability of analgesics. In the period from 2009-2014, ATOM project in Serbia was funded by the European Commission, including 10 partner organizations from 6

countries and the WHO, with the aim of evaluating the use of the system. For 2010, the use of an ophthalmologist, which according to the WHO represents 14% of adequate use, was established. The most important barriers are the lack of education, legislative barriers, and financial aspects such as drug reimbursement and insurance. The ATOM project resulted in recommendations whose implementation, together with WHO recommendations, is still expected. In addition, in order to improve the possibility of pharmacological treatment of pain, it is necessary to increase the availability of a wider range of medicines on the Medicines List, which are prescribed and issued at the expense of the Health Insurance Fund, in accordance with the Essential Medicines List of the WHO and the recommendations of the Lancets Commission on Essential Medicines Policies, as well as NeuPSiG, which focus on anti-neuropathic drugs and medication. The need for expanding specialty groups for certain analgesics has been identified, enabling specialists in pain medicine to prescribe analgesics of all groups.

In the organization of the Intersection Pain Committee of the Serbian Medical Association, the course was held entitled “Assessment Techniques and Principles of Pharmacological Treatment of Chronic Pain” on September 13, 2017. The course enabled the acquisition of practical knowledge in the assessment and pharmacological treatment of pain. In the same organization, another course was held, entitled “Injection pain therapy: musculoskeletal infiltration, blockage of peripheral nerves and spinal injection” on October 14, 2017. This course also enabled the acquisition of practical skills, but in the treatment of various chronic pain conditions (back pain, myofascial syndrome, fibromyalgia, tendinopathy, joint pain, neuralgia) using injection therapy (infiltration, blockade, epidural injection).

Association of Physicians of Vojvodina, Serbian Medical Association, the branch in Novi Sad, held an expert meeting in Novi Sad on September 19, 2017, entitled “The place and role of non-steroidal anti-inflammatory drugs in the removal of pain in patients with osteoarthritis”. The lectures especially emphasized that the goals of pharmacotherapy in osteoarthritis are to reduce morbidity and to prevent complications. On the basis of the available data, they said that they see no role for single-agent paracetamol for the treatment of patients with osteoarthritis irrespective of dose. Also, they talked how to provide sound evidence that diclofenac 150 mg/day is the most effective NSAID available at present, in terms of improving both

pain and function. Nevertheless, in view of the safety profile of these drugs, medical doctor need to consider our results together with all known safety information when selecting the preparation and dose for individual patients with osteoarthritis.

Also, The Association of Physicians of Vojvodina, Serbian Medical Association, the branch in Novi Sad, organized another expert meeting at the branch in Zrenjanin, on September 21, 2017, entitled "Differential diagnosis of Chest Pain" which talked about various diagnostic methods related to chest pain. It was emphasized that for differential diagnosis of chest pain, it is significant to get answers to the following questions: Duration of pain? Was it sudden? Gradual? Lasts Minutes? Lasts Hours? Varies?

On September 28, 2017, the Clinic for Neurology, Clinical Center of Serbia, held a conference on the topic "Polyneuropathies in Clinical practice - How to diagnose and treat them". The lecturers pointed out that polynuropathies are characterized by symmetrical, distal sensory disturbance for all modalities on the hands and feet by type of "glove" and "sock" (the passage is gradual, not sharp), with hypotrophy and weakness of the distal muscles (if sensitive fibers are damaged together with motor fibers) and with reduced or extinguished muscle reflexes. Lecturers noted the following as important for the diagnosis of polyeneruopathy: electrodiagnostic test and laboratory tests, determined by suspected type of neuropathy.

At the First Congress of Endoscopic Surgeons of Serbia with international participation, which was held from October 12 - 14, 2017 in Belgrade, there was a session entitled "Post-operative analgesia after minimal invasive procedures". Lecturers pointed out that pain that originates from skin incision and places with implanted ports is easily treated with NSAID or possibly poor opioids. They pointed out that it is very useful in this area to perform local anesthetic infiltration and in the case of thoracoscopy, the application of local anesthetics to the pleural space can be performed. Usually, this pain occurs as a result of a residual amount of insufflated CO<sub>2</sub> that irritates the diaphragm and stretches the visceral peritoneum, causing pain in the shoulder, and abdominal pain in the form of flatulence and cramps. Pain lags up to 72 hours and is very unpleasant. This pain can be reduced by active aspiration of the gas under the diaphragm and above the liver (Air Gas Active Removal with Above the Liver Aspiration (AGARwALA) Maneuver procedure), but also by

increasing the trans-pulmonary pressure in ventilation of the patient, while the ports are still open to exit the gas as much as possible. The ultimate option is to set the sub frenetic catheter, as well as the application of local anesthetics to that area.

In the organization of the Section for Physical Medicine and Rehabilitation of the Serbian Medical Association and Assistance for the Treatment of Pain in Rehabilitation, a Master Class was held on October 14, 2017, entitled “Many Faces of Musculoskeletal Pain - How to achieve Optimal Treatment?”. The lectures in this scientific meeting described the epidemiology, pathophysiology, natural history, diagnosis, treatments and prognosis of common painful musculoskeletal diseases, including but not limited to inflammatory and degenerative joint disease, soft tissue rheumatism and diffuse body pain. Also, the lectures described the principles, indications and limitations of physical treatments, including but not limited to exercise based treatment, passive physical therapies such as ultrasound, transcutaneous electrical nerve stimulation (TENS), manual therapies, manipulation and massage in the management of musculoskeletal pain.

Serbian Medical Association, Section for Physical Medicine and Rehabilitation, held an expert meeting in Belgrade, on October 20, 2017, entitled “Chronic diffuse muscular skeletal pain - the role of physiatrist”. In this scientific meeting lectures described the knowledge of diagnosis, appropriate investigations and management of common rheumatic conditions, including but not limited to rheumatoid arthritis, connective tissue diseases, seronegative arthritis, polymyalgia rheumatica, inflammatory myopathy and soft tissue pain disorders, such as myofascial pain and fibromyalgia.

Society of Serbian Neurologists, Clinic of Neurology, Center of Serbia, and Clinic of Neurology of the Military Medical Academy and the Society of Neurologists Clinical of the Republic of Srpska, all together held the XI/XVII Congress of Society of Serbian Neurologists with international participation, from November 24 - 26, 2017. The main topics of the Congress were: Cerebrovascular diseases, Epilepsy, Multiple Sclerosis and Neurodegenerative diseases. Within the framework of these main topics of the Congress, a theme related to the Pain in Cerebrovascular diseases, Epilepsy, Multiple Sclerosis and Neurodegenerative diseases has been addressed as well.

The Serbian Association of Pain Research and Treatment (SAPRT), in cooperation with Serbian Medical Association Chapter, Novi Sad, held an International Symposium “Modern trends in diagnosis and treatment of pain in degenerative rheumatic diseases”, on November 18, 2017. They had the pleasure to invite the international speakers, from the Public Health Department College of Health Sciences at Qatar University, Prof. Dr. F. Hanna and Dr. M. Klopčič Spevak, PhD, from University Rehabilitation Institute, Ljubljana, Slovenia. Serbian and international speakers explored the topics related to osteoarthritis pain, such as epidemiology and pathophysiological aspects, evidence for central sensitization in patients with osteoarthritis pain, mechanisms of transition from acute to chronic pain, pharmacological approach and multimodal approaches in clinical practice. Prof. Dr. Hanna F. presented lecture “An exercise and knee cartilage properties in healthy adult women in midlife”. The education sessions included workshops where many interesting cases from the aspect of differential diagnostics, evaluation of patients using different scales, risk of application and interactions of various drugs, application of pharmacological and non-pharmacological treatment were presented. The concluding session focused on mistakes in the treatment of pain in case report design. One of the workshops held by Prof. Dr. F. Hanna from Doha (Qatar), was dedicated to education of professionals in a new approach “How do we influence patients’ behavior change on multiple-level interventions”. Among the 170 participants there were primary care physicians, psychiatrists, rheumatologists and specialists in pain medicine. High attendance and mixed audience reflected a strong interest in osteoarthritis pain. The symposium received support from the Health Council of Vojvodina, the Faculty of Medicine of the University of Novi Sad and the Chamber of Economy of Vojvodina.

The Institute for Psychophysiological Disorders and Speech Pathology “Prof. Dr. Cvetko Brajović” held an expert meeting in Belgrade, on November 23, 2017, entitled “Contemporary Neuropathic Pain Treatment”. Lecturers at this expert meeting stressed in particular that numerous pharmacological substances are available for the treatment of neuropathic pain, but clearly defined and effective drug therapy is still unachievable. They also stressed that it is often necessary to triple drug therapy, with tricyclic antidepressants, anticonvulsants and systemic local anesthetics. Occasionally, there are patients who need chronic opioid therapy in combination with the already mentioned drugs.

The Institute of Rheumatology, Clinical Hospital Center of Serbia, held an expert meeting on November 24, 2017, in Belgrade, entitled “Pregabalin and Central Neuropathic Pain in Rheumatology”. The lecturers pointed out those preclinical, as well as clinical studies, project pregabalin as a very effective agent for treating neuropathic pain with a very good safety profile. Also, they pointed out that the inhibition of voltage gated Ca<sup>2+</sup>channel is the most likely target for pregabalin action, which contributes to the reduction of excitatory neurotransmitters release and inhibition of synaptic transmission.

The Serbian Medical Association, Section for Physical Medicine and Rehabilitation, held another expert meeting in Belgrade on December 1, 2017, about “Pain in the Knee”.

The Association of Medical Oncologists of Serbia held a Symposium for Eastern Europe and the Balkans on “Supportive Therapy of Malignant Diseases” on December 1 and 2, 2017, in Belgrade. The symposium presented modern guides for the treatment of the most severe symptoms of malignancies and the most common complications of oncology therapy. The main objective of this symposium was to point out the importance of preserving the quality of life of both the patient and the family, during malignant disease and oncological treatment. The course has been designed for medical oncologists, who wish to improve their skills in supportive and palliative oncology. Over 150 participants and lecturers, representing 21 countries, attended the first meeting and based on its success it was decided to continue.

In the organization of the Institute of Sport and Sport Medicine of the Republic of Serbia, on December 7, 2017, a seminar was held, with the topic: “Modern diagnostics and Lumbar Pain Treatment”. Lecturers at this meeting stressed out that in the diagnosis of lumbar pain, immediately after the first step involving the identification of patients with lumbar syndrome with warning factors, it is most important to assess whether it is a non-specific pain or radical pain, as this is mainly determined by therapy options. A patho-anatomic diagnosis such as dyspnoea, spondylarthrosis or spinal stenosis is not sufficient as all of these can cause both types of pain. Lecturers emphasized that despite the high frequency and significant socio-economic impact, it can still be said that, globally, we do not have optimal therapeutic strategies in solving acute and chronic lumbar pain. Different ethology,

multifactorial pathophysiological evolution of lumbar pain mechanisms and various clinical manifestations require careful diagnosis and individual consideration of multimodal therapeutic options.

Association of Physicians of Vojvodina, Serbian Medical Association, and Section for Physical Medicine and Rehabilitation held an expert meeting on December 22, 2017, in Novi Sad, entitled “Shoulder Pain after the stroke”. The lecturers pointed out that shoulder pain has been reported to be one of the most common complications after stroke. The lectures also said that different protocols have used various terms for shoulder pain, for example, shoulder pain in hemiplegia, hemiplegic shoulder pain, and post-stroke shoulder pain. Sometimes, it is unclear whether only proximal pain in the arm was assessed or if more distal arm pain also was included. Shoulder pain hinders rehabilitation, is an important contributor to length of hospital stay, and has been associated with depression and decreased quality of life.

Finally, the Association for Pain Treatment “Constantine” held a seminar “Basic facts about Pain and its therapy with examples from clinical practice”. Lecturers emphasized that the knowledge of pain physiology is of essential importance for good medical practice and strategy in painful conditions therapy. In some emergency clinical conditions, a good analytic allows contact with the patient to take anamnesis and provides other diagnostic procedures that lead to the diagnosis and effective therapeutic protocols, in order to solve the cause of the homeostasis of the organism. After all this numerous programs and meetings launched and held on the subject of pain in Serbia during the year of 2017, and in the previous years, it is clear that there is great interest in this problem. This interest is primarily present in professional circles and that is where the attempts to enrich and improve knowledge of pain by organizing various meetings, with very interesting topics, comes from.

Nevertheless, all these meetings represent a form of continuous medical education. This implies that students are already familiar with a large part of the problem that the meeting deals with, and that knowledge is renewed and expanded.

The basic lack of education of professionals in the field of pain medicine is the long-standing lack of organized and comprehensive education programs in this field. Very significant efforts were made through the German Ministry of Health Project



(Progress in Pain Medicine) and the ATOM project, which certainly influenced many to raise and improve knowledge in the field of pain medicine. Still, by observing the goals of the project, they have not been fully realized so far (undergraduate studies, improvement of the postgraduate curriculum).

What is in the long run certainly the most important for the field of pain medicine in Serbia is the existing sub specialization, which is carried out at the Faculty of Medicine University of Belgrade from the academic year of 2013/2014. This sub specialization was the result of the efforts of the professors of the Faculty of Medicine, after the completion of the project "Palliative Medicine and Pain Medicine - PPMP", led by Prof. Dr. Predrag Stevanović and Prof. Dr. Bogdan Djuričić, the Dean of the Faculty of Medicine, which was implemented at the Faculty from 2006-2009.

Four years were necessary, first at the Faculty, and then in the Ministry of Health, to approve the new specializations and raise awareness of the need for organized education in the field of pain medicine. On the proposal of Prof. Dr. Predrag Stevanović, Department of Anesthesiology with Reanimatology, led by Prof. Dr. Nevena Kalezić, submitted as a formal proposal for the specialized postgraduate education course, which was accepted and finalized by the Ministry of Health of the Republic of Serbia, from 2013 the Sub specialization of Pain Medicine, led by Prof. Dr. Predrag Stevanović as the Head of the Department. Sub specialization has been successfully implemented as the education program in the field of pain medicine for 5 years now. Over time, there was a need for the curriculum of this sub specialization to be modernized and, of course, the HEPMP project is a significant wind in the back of such attempts.

It should be noted that the HEPMP project sublimates the efforts of numerous previous attempts and the intention to improve the education in the field of pain medicine, both in the existing subspecialization and in the field of undergraduate education.

Strengthening Capacities for Higher Education of Pain Medicine in Western Balkan  
countries – HEPMP

Project number: 585927-EPP-1-2017-1-RS-EPPKA2-CBHE-JP

Contacts:

Prof. dr **Predrag Stevanovic**

Email: [hepmperasmus.ka2@med.bg.ac.rs](mailto:hepmperasmus.ka2@med.bg.ac.rs)

Internet portal: [www.hepmp.med.bg.ac.rs](http://www.hepmp.med.bg.ac.rs)

Forum: [www.hepmp.med.bg.ac.rs/forum/](http://www.hepmp.med.bg.ac.rs/forum/)

Telephone: +381 11 3636396

*This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*