

80TH ANNIVERSARY OF THE DEPARTMENT OF RHEUMATOLOGY, PHYSICAL AND REHABILITATION MEDICINE OF THE SESTRE MILOSRDNICE UHC IN ZAGREB*

OSAMDESETA OBLJETNICA KLINIKE ZA REUMATOLOGIJU, FIZIKALNU MEDICINU I REHABILITACIJU KBC-A SESTRE MILOSRDNICE U ZAGREBU*

Simeon Grazio¹

¹ Department of Rheumatology, Physical and Rehabilitation Medicine,
Sestre milosrdnice University Hospital Centre, Zagreb
/ Klinika za reumatologiju, fizikalnu medicinu i rehabilitaciju,
Klinički bolnički centar Sestre milosrdnice, Zagreb



Prof. dr. Simeon Grazio
Head of the Department

Corresponding author / Adresa autora za dopisivanje:

Professor Simeon Grazio, MD, PhD

Department of Rheumatology, Physical and Rehabilitation Medicine

/ Klinika za reumatologiju, fizikalnu medicinu i rehabilitaciju

Sestre milosrdnice University Hospital Centre

/ Klinički bolnički centar Sestre milosrdnice

Vinogradska cesta 29, 10000 Zagreb

Croatia / Hrvatska

E-mail / e-pošta: simeon.grazio@kbcsm.hr

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INTRODUCTION

The Department of Rheumatology, Physical and Rehabilitation Medicine is the oldest and largest department that simultaneously encompasses two related fields, rheumatology, and physical and rehabilitation medicine, and which operates as part of one of the largest university hospital centres (UHCs) in Croatia. The operation of the Department is focused on the diagnosis, treatment and rehabilitation of adults and children with various diseases and conditions, mainly those of the locomotor system. In addition to that, the operation of the Department is based on a multidisciplinary approach and teamwork, while putting the patient in the centre of all activities. The employees of the Department are leading experts in their fields, who play an important role in shaping the future of our profession, in education, as well as in scientific research. The Department is the Referral Centre for Spondyloarthropathies of the Ministry of Health of the Republic of

UVOD

Klinika za reumatologiju, fizikalnu medicinu i rehabilitaciju najstarija je i najveća klinika koja istovremeno obuhvaća dva srodna područja, reumatologiju i fizikalnu medicinu i rehabilitaciju, a djeluje u sklopu jednoga od najvećih kliničkih bolničkih centara (KBC) u Hrvatskoj. U klinici se provodi dijagnostika, liječenje i rehabilitacija odraslih i djece s različitim bolestima i stanjima, uglavnom onima koja se manifestiraju na lokomotornom sustavu. Temelj je djelovanja klinike multidisciplinarnost i timski rad, s bolesnikom u središtu. Djelatnici klinike su vodeći stručnjaci iz područja svog djelovanja, koji imaju važnu ulogu u oblikovanju struke, u edukaciji, kao i u znanstvenom radu. Klinika je referentni je centar za spondiloartritis Ministarstva zdravstva Republike Hrvatske i jedna je od svega tri takve organizacijske jedinice iz područja reumatologije u Hrvatskoj. Više od deset godina centar je obuke Europskog odbora za fizikalnu i rehabilitacijsku

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Croatia, and it is one of only three such organisational units in the field of rheumatology in Croatia. It has been the training centre of the European Board for Physical and Rehabilitation Medicine for over ten years and it is the only such centre in Croatia. The employees of the Department are active members of various professional societies in Croatia, and they are also actively involved in the work of various international associations and organisations. The Department is the teaching base of the School of Medicine of the University of Zagreb, and it also serves as the institution in which teaching activities are performed for several other institutions of higher education. The employees of the Department have organised and actively participated in several national and international professional meetings and conducted numerous courses and other forms of education, including public health initiatives. They have participated in various projects, published many books/textbooks or book chapters, as well as articles (including articles published in scientific journals with a high impact factor), which contributes to the scientific status of the Department. The Department of Rheumatology, Physical and Rehabilitation Medicine has reached a high level of quality in professional, scientific, and educational terms in its overall areas of activity in Croatia, and it has become an internationally renowned institution.

This article provides an overview of the Department's history, present and future, with an emphasis on the last twenty years of its operation, i.e., the period after the publication of the last major published work – the monograph of the institution.

HISTORICAL DEVELOPMENT OF THE DEPARTMENT

The Department of Rheumatology, Physical and Rehabilitation Medicine is the oldest organisational unit in Croatia that is a part of a hospital. Physical therapy was first introduced in Croatia in the early 1920s, when Lujo Thaller, MD, an internist, started practising this therapy at the Department of Internal Medicine of the then hospital, "Bolnica Milosrdnih sestara". In 1938, the then Department of Internal Medicine, whose head was Lujo Thaller, MD, was renovated and partly expanded, and, at the time, it was the most modern hospital department with a total of 135 beds. On 1 August 1938, the Division of Physical Therapy and Rheumatism was established as part of the Department of Internal Medicine, and Aleksandar Kraut, MD was appointed its head. Jozo Budak, MD, who will later become an expert in the field of physical medicine and rehabilitation, was one of the four physicians who volunteered as part of their medical specialisation training (residency) at the then Department of Internal Medicine. On 19 March 1940, Budak was appointed

medicinu i jedini je takav centar u Hrvatskoj. Djelatnici klinike su vrlo aktivni u nekoliko stručnih društava u Hrvatskoj, kao i u radu međunarodnih udruga i organizacija. Klinika je nastavna baza Medicinskoga fakulteta Sveučilišta u Zagrebu, a na njoj se provodi i nastava nekoliko drugih visokoškolskih ustanova. Djelatnici klinike organizirali su više domaćih i međunarodnih skupova na kojima su bili aktivni sudionici te su proveli brojne tečajeve i ostale oblike edukacije, uključivo i javnozdravstvene akcije. Sudjelovanje u projektima, objava više knjiga/udžbenika ili poglavlja u njima, kao i članci (uključivo i u časopisima s visokim čimbenikom utjecaja) doprinose znanstvenom statusu klinike. Svojim sveukupnim djelovanjem Klinika za reumatologiju, fizikalnu medicinu i rehabilitaciju ima visok stupanj kvalitete u stručnom, znanstvenom i edukativnom pogledu u područjima svoga djelovanja u Hrvatskoj, a prepoznata je i u međunarodnim okvirima.

U ovom članku daje se pregled povijesti klinike, s naglaskom na zadnjih dvadeset godina, odnosno nakon objave zadnje veće publikacije – monografije bolnice, te njezina sadašnjost i budućnost.

POVIJEST KLINIKE

Klinika za reumatologiju, fizikalnu medicinu i rehabilitaciju najstarija je organizacijska jedinica iz tog područja medicine koja je dio jedne bolnice u Hrvatskoj. Prvi počeci uvođenja fizikalne terapije u nas bili su početkom dvadesetih godina 20. stoljeća, u sklopu Internog odjela tadašnje Bolnice Milosrdnih sestara, kada se tom problematikom počeo baviti internist dr. Lujo Thaller. Godine 1938. tadašnji Interni odjel, čiji je voditelj bio upravo dr. Thaller, bio je adaptiran i uređen, a dijelom i dograđen te je u to vrijeme bio najsuvremeniji bolnički odjel s ukupno 135 kreveta. Na tom je odjelu 1. kolovoza 1938. započeo s radom Odsjek za fizikalnu terapiju i reumatizam, a njegov je voditelj bio dr. Aleksandar Kraut. Među četvero liječnika – volontera na specijalizaciji tadašnjeg Internog odjela bio je i dr. Jozo Budak, koji će se usmjeriti u područje fizikalne medicine i rehabilitacije. On će 19. ožujka 1940. postati i voditelj toga Odsjeka, koji se od tada počinje i intenzivnije razvijati. Odsjek je bio smješten u tadašnjoj III. kući (danas Klinika za unutarnje bolesti), a imao je dvanaest kreveta i kabinet za elektroterapiju u okviru kojega su bolesnici liječeni galvanoterapijom, Faradayevim strujama i fototerapijom, a tu je započela i galvansko-faradska elektrodijagnostika. U podrumu Internog odjela provođeno je liječenje hidrotterapijom i blatnim kupkama, uključivo, između ostaloga, kupelji s ugljičnim dioksidom, „enterocleanerima“ (irigacijska metoda čišćenja crijeva). U početku su zaprimani samo bolnički pacijenti, a već sljedeće godine i ambulantni. Proširenjem na tadašnju IV. kuću (danas Klinika za

the head of that Division, which started to develop more intensively since his appointment. The Division was located at the then Third House (today known as the Department of Internal Medicine) and it was equipped with twelve beds and an office for electrotherapy, where the patients were treated with galvanotherapy, faradaic current and phototherapy, and it was also the place where galvanofaradic electrodiagnostic testing first started to be used. In the basement of the Department of Internal Medicine, treatment was carried out in the form of hydrotherapy and mud baths, including, among other things, baths with carbon dioxide, that is "enterocleaners" (a bowel irrigation method). At the beginning, only inpatients were admitted, and outpatient admission started one year after its establishment. The Department was given another annex in the form of the then Fourth House (today known as the Department of Ophthalmology) where the office for electrotherapy was located, and the Third House was equipped with additional six beds and a laboratory. The Division became an independent unit, and it was upgraded to the Department of Physical Therapy and Rheumatology, which was officially established and started operating on 19 March 1941. It was the first independent department in Croatia for patients with rheumatic diseases. Due to wartime conditions in 1942, the premises of the Department were confiscated for military purposes, and the patients were moved to other departments of the hospital. After World War II, on 15 April 1946, the Department started operating again, at the same premises where it operated prior to the war. This was followed by a brief period in which the Department stopped operating, and then, due to the large number of disabled people, and at the instigation of UNICEF and the World Health Organization (WHO), the Secondary Medical School was established, and in connection with this, the Department was reopened in 1948 as the Department of Physical Medicine and Rehabilitation. The Department was located at the Eleventh House of the hospital, after these premises were no longer used as the student dormitory. The hospital had previously stopped using that building and deemed it unusable, and the Red Cross adapted it to serve as a student dormitory.

Prof. Jozo Budak was a unique individual with innovative ideas and far-sighted in his work. One could rightly say that the concept of modern physical medicine and rehabilitation in Croatia began to take shape precisely due to his professional work. Prof. Budak, MD, PhD, obtained his professional qualification abroad (he graduated in Graz and completed his medical residency in Vienna, Frankfurt am Main, Wiesbaden and Paris). He passed the specialty examination in Zagreb (on 17 October 1939) and was the first specialist in Physical Therapy, Balneology and Climatolo-

očne bolesti), gdje se smješta kabinet za elektroterapiju, u III. kući dobiva se prostor za još šest kreveta i laboratorij. Odsjek postaje samostalan i prerasta u Odjel za fizikalnu terapiju i reumatologiju, koji je službeno počeo s radom 19. ožujka 1941. Bio je to prvi samostalni odjel u našoj zemlji za bolesnike koji su bolovali od reumatskih bolesti. Zbog ratnih prilika 1942. godine prostorije Odjela bile su oduzete za vojne svrhe, a bolesnici su bili preseljeni po drugim odjelima bolnice. Nakon Drugoga svjetskog rata Odjel ponovo započinje s radom, 15. travnja 1946. u prijeratnim prostorima. Uslijedio je kraći prekid rada, a potom je zbog velikog broja invalida, a na poticaj UNICEF-a i Svjetske zdravstvene organizacije (SZO) osnovana Srednja medicinska škola, te je u vezi s tim Odjel ponovo otvoren 1948. godine pod nazivom Odjel za fizikalnu medicinu i rehabilitaciju. Bio je smješten u XI. kući bolnice, nakon iseljenja đачkog doma. Naime, tu je zgradu Bolnica prethodno bila napustila kao neupotrebljivu, a Crveni križ ju je adaptirao za potrebe đачkog doma.



FIGURE 1. / SLIKA 1.
Prof. dr. Jozo Budak,
Head of the Department / Predstojnik klinike
1940.–1966.

Prof. Jozo Budak bio je, inače, jedinstvena osoba, inovativan i dalekovidan. S pravom se može reći da se suvremena koncepcija fizikalne medicine i rehabilitacije u Hrvatskoj počela oblikovati upravo njegovim profesionalnim radom. Dr. Budak je stručnu kvalifikaciju stekao u inozemstvu (diplomirao u Grazu, a specijalizirao u Beču, Frankfurtu na Majni, Städtu i u Parizu), dok je specijalistički ispit položio u Zagrebu (17. listopada 1939.) i bio je prvi specijalist iz fizikalne terapije, balneologije i klimatologije u tadašnjoj državi. Iz Beča je bio poslao za objavu svoj članak „Današnje stanje primjene niskofrekventnih struja u medicini i njihovo značenje“, koji je objavljen u *Liječničkom vjesniku*

gy in Croatia at that time. While he was in Vienna, he sent his article *Današnje stanje primjene niskofrekventnih struja u medicini i njihovo značenje* (in English: "Today's state of application of low-frequency currents in medicine and their meaning"), which was published 1938, in the third issue of the *Liječnički vjesnik* medical journal. On the 14 March 1939, he held a lecture *Bit djelovanja visokofrekventnih struja i glavni principi metoda aplikacije* (in English: "Mechanism of action of high-frequency currents and main principles of application methods") at the meeting of the Croatian Medical Association (in Croatian *Zbor liječnika*). As early as 1940, he designed a device for electrotherapy at the then laboratory of the Division, and he later designed a device for sound therapy. Furthermore, he performed experiments with electronarcosis, used pyrotherapy, extensively investigated physical therapy methods for the treatment of lymphedema, studied the biology of disabled persons and their adaptation to environmental factors (including performing experiments on animal models). Under the guidance of Prof. Budak, in the period from 1948 to 1954, an experimental study of treatment of approximately 300 patients with rheumatoid arthritis, which was conducted using freshly extracted pituitary glands originating from young animals, was carried out, along with a follow-up of their therapeutic response using clinical and laboratory parameters. In general, Prof. Budak advocated the use of active kinesitherapy (dynamic rehabilitation) as the most valuable part of treatment and rehabilitation. He was an avid advocate of occupational therapy, and the founder of the *Dug život u radu* (in English: "Long Active Life") society.

In 1942, Prof. Budak started teaching physical therapy at the School of Medicine in Zagreb as a visiting lecturer (he was later appointed Associate Professor), at the Department of Neurology and Psychiatry. It should be noted that in 1946, Prof. Budak proposed to the School of Medicine in Zagreb to establish an independent Department of Physical Therapy, which was unfortunately not realised at the time. Prof. Budak was an active member of numerous professional societies and organisations. He was one of the founders and the first chairman of the Section of Rheumatology, Physical Medicine and Balneoclimatology (1947 – 1949), which was founded on 30 June 1947. Other founders of this Section, along with Prof. Budak, were Prof. Josip Breitenfeld, MD (neurologist), Prim. Drago Čop, MD (rheumatologist), Herman Jurak, MD (rheumatologist), Prof. Danko Riessner, MD (neurosurgeon), Prof. Dinko Sučić, MD (internist), Prim. Lujo Thaller, MD (internist), Leo Trauner, MD (balneologist) and Anka Zdunić-Orešković, MD (physiatrists). Prof. Budak had a prominent role in that professional society, i.e., in that Section, and he was also its vice-chairman (1949

br. 3, 1938., dok je u Zboru liječnika u Zagrebu 14. ožujka 1939. održao predavanje „Bit djelovanja visokofrekventnih struja i glavni principi metoda aplikacije“. Još 1940. konstruirao je aparat za elektroterapiju u tadašnjem laboratoriju Odsjeka, a potom i aparat za terapiju zvukom, provodio je pokuse s elektronarkozom, primjenjivao piroterapiju, intenzivno proučavao metode fizikalne terapije za liječenje limfedema, istraživao biologiju invalidnosti i adaptacije na vanjske čimbenike (uključivo i pokuse na eksperimentalnim životinjskim modelima). Pod njegovim vodstvom u razdoblju od 1948. do 1954. u oko 300 bolesnika s reumatoidnim artritisom proveo je pionirsko istraživanje liječenja svježim hipofizama mladih životinja, a terapijski odgovor praćen je klinički i laboratorijski. Općenito, prof. Budak se najviše zalagao za primjenu aktivne kineziterapije (dinamička rehabilitacija), kao najvrjednijeg dijela u liječenju i rehabilitaciji. Zalažući se za liječenje radom osnovao je društvo „Dug život u radu“.

Prof. Budak je još 1942. počeo predavati na Medicinskom fakultetu fizikalnu terapiju kao honorarni nastavnik (do zvanja izvanrednog profesora), u sklopu Katedre za neurologiju i psihijatriju. Vrijedno je napomenuti da je 1946. prof. Budak predložio Medicinskom fakultetu u Zagrebu osnivanje samostalne Katedre za fizikalnu terapiju, što nažalost tada nije realizirano. Prof. Budak je bio vrlo aktivan u mnogim stručnim društvima i organizacijama. Tako je bio jedan od utemeljitelja i prvi predsjednik Sekcije za reumatologiju, fizikalnu medicinu i balneoklimatologiju (1947. – 1949.), osnovane 30. lipnja 1947. Uz prof. dr. Budaka osnivači sekcije bili su prof. dr. Josip Breitenfeld (neurolog), prim. dr. Drago Čop (reumatolog), dr. Herman Jurak (reumatolog), prof. dr. Danko Riessner (neurokirurg), prof. dr. Dinko Sučić (internist), prim. dr. Lujo Thaller (internist), dr. Leo Trauner (balneolog) i dr. Anka Zdunić-Orešković (fizijatar). U tome stručnom društvu – sekciji prof. Budak je imao istaknutu ulogu te je, između ostaloga, bio i njezin dopredsjednik (1949. – 1956.). U prosincu 1949. Sekcija je organizirala svoj „Prvi naučni sastanak“, održan u Hrvatskome liječničkom zboru, na kojem je prof. Budak bio nositelj jedne od glavnih tema „Organizacija zdravstvene službe u reumatologiji, balneoklimatologiji i fizikalnoj medicini“. Pod njegovim se vodstvom u nas, napose od 1951., počelo sa suvremenom rehabilitacijom kao samostalnim oblikom zdravstvene zaštite utemeljenim na koncepcijama SZO-a. Prof. Budak bio je najvažniji pokretač, utemeljitelj i predavač Škole za fizikalnu medicinu i rendgen, osnovane 1. kolovoza 1947., koja je bila prva takva škola u tadašnjoj državi, a 1957. proširena je Odsjekom za radne terapeute i medicinske elektroničare. Iako je tada u inozemstvu bio običaj da se edukacija iz fizioterapije i radne terapije upisuje s navršениh 19 godina, prof. Budak je inzistirao na upisu nakon osnovne

– 1956). In December 1949, the Section organised its First Scientific Meeting (in Croatian: *Prvi naučni sastanak*), which was held at the premises of the Croatian Medical Association (CMA), and at that event, Prof. Jozo Budak held a lecture on one of the main topics. Prof. Budak presented one of the main topics *Organizacija zdravstvene službe u reumatologiji, balneoklimatologiji i fizikalnoj medicini* (“Organisation of health services in rheumatology, balneoclimatology and physical medicine”). Under his guidance, especially since 1951, modern rehabilitation started to be performed as an independent form of healthcare based on the concepts of WHO. Prof. Jozo Budak was the main instigator, founder and lecturer at the School of Physical Therapy and X-Ray, which was established on 1 August 1947. This was the first school of that type in Croatia, and in 1957 it was expanded with the addition of the Division of Occupational Therapy and Medical Electronics. Although, at the time, it was a customary practice abroad for students to enrol in the physiotherapy and occupational therapy classes at the age of 19, Prof. Budak insisted on the initiation of the enrolment process after the completion of elementary school (that is, after year eight), because he believed that for the development of abilities and the mastery of knowledge and skills, it is better to be of young age. Numerous employees of the then Department/Divisions were lecturers at the aforementioned School. In 1949, Prof. Budak became the founder of the health resort *Igalo* in Montenegro, which offered peloid mud treatments as well as mineral water baths.

On 1 August 1958, the Department of Physical Medicine and Rehabilitation became the Republic Department of Physical Medicine and Rehabilitation of the People's Republic of Croatia, and Prof. Budak became its first head. On 1 March 1959, the Department had officially separated from the former “Dr. Mladen Stojanović” hospital and became an independent institution. Nevertheless, the Department continued to operate at the same location on the hospital grounds and collaborate with the organisational units of the hospital. The establishment and operation of the Department were a major shift in the quality of rehabilitation of patients with special needs. Comprehensive multidisciplinary rehabilitation, including occupational rehabilitation (more than 30 occupations), was carried out at the Department. In addition to that, occupational therapy, and music therapy, as well as cybernetics started to be applied in the rehabilitation and education of children with developmental disorders. In 1963, the first experimental electronic classroom for frontal programmed teaching in the country was designed and presented. The classroom was equipped with 30 communicators, and it was designed in collaboration with the engineer, Branimir Makanac. This classroom

škole (osmoljetke), jer je držao da je za razvoj sposobnosti i savladavanje znanja i vještina potrebna što mlađa životna dob. Inače, u toj su školi predavali brojni djelatnici tadašnjeg Odjela/Zavoda. Još ranije, 1949. godine prof. Budak je bio osnivač peloidnog i mineralnog kupališnog lječilišta *Igalo* u Crnoj Gori.

Odjel 1. kolovoza 1958. prerasta u Republički zavod za fizikalnu medicinu i rehabilitaciju NR Hrvatske, čiji ravnatelj postaje prof. Budak, a od 1. ožujka 1959. godine Zavod se i formalno odvaja od tadašnje Bolnice „Dr. Mladen Stojanović“ i postaje samostalna ustanova, iako uvijek radi na istoj lokaciji u bolničkom krugu te surađuje s organizacijskim jedinicama bolnice. Osnivanje i rad Zavoda značili su velik pomak u kvaliteti rehabilitacije osoba s posebnim potrebama. U Zavodu se provodila sveobuhvatna multidisciplinarna rehabilitacija, uključivo i onu profesionalnu (više od 30 zanimanja), počele su se primjenjivati radna terapija i terapija glazbom (muzikoterapija), kao i kibernetika u rehabilitaciji i edukaciji djece ometene u razvoju. Godine 1963. izrađena je prva elektronička eksperimentalna učionica za frontalnu programiranu nastavu u tadašnjoj državi, s 30 komunikatora, izrađena u suradnji s ing. Branimirom Makancem, koja je uvedena u rad sljedeće godine (poslije je darovana Tehničkomu muzeju u Zagrebu). Godine 1960. Zavod se proširuje izgradnjom stacionara u kojemu su smješteni Odjel za reumatske bolesti i fizikalnu terapiju i Odsjek za rehabilitaciju djece, kao i montažne zgrade za profesionalnu rehabilitaciju (obrada drva, obrada metala – precizna mehanika, radiomehanika i dr.). Otvara se i Odjel za dijagnostiku i uvode suvremene elektrodijagnostičke metode. Naime, u nas se EMG kao dijagnostička metoda pojavio 1958. kad je prof. Budak dobio na dar od UNICEF-a trokanalni elektromiografski uređaj DISA, prvi takav na Balkanu. Tako je u Zavodu razvijana elektromiografija pod vodstvom dr. Franje Gračanina (prvi službeni nalaz izišao je 1963.), a uz njega se tom metodom bavila i dr. Ruža Sabol. Kraće je vrijeme 1963. trajala intenzivna suradnja s pedijatrima (P. Žeškov), odnosno dijagnostika u djece. U suradnji sa specijalistima ORL-a (F. Marinović) rađene su pretrage na otvorenom larinksu, a u suradnji s okulistima (dr. N. Laktić i dr. S. Padovan) ispitivani su vanjski i unutarnji mišići oka. Također s dermatolozima (dr. A. Gospodnetić) ispitivane su promjene mišića u bolesnika s polimiozitisom i sistemskim lupusom, a s neurolozima miastenije (tenzilonski test). Odlaskom dr. Gračanina u Ljubljani jedno se vrijeme u Zavodu dijagnostikom bavi prof. Zlatko Domljan, a od 1968. prim. dr. Čedo Ljubin (nakon specijalističkog ispita i edukacije u Ljubljani). Od 1963. započinje veće zanimanje neurologa i suradnja Zavoda s našom poznatom stručnjakinjom iz tog područja prof. Anicom Jušić, koja tu dobiva prvu edukaciju i koja, uočivši vrijednost metode, odlazi

was put into operation in the following year (it was later donated to the Technical Museum in Zagreb). In 1960, the Department was further expanded by building an inpatient facility that housed the Department for Rheumatic Diseases and Physical Therapy and the Division for the Rehabilitation of Children, as well as prefabricated buildings for professional rehabilitation (wood finishing, metalworking – precision mechanics, radio mechanics, etc.). The Department of Diagnostics was also established and modern electrodiagnostic methods were introduced. EMG started to be used as a diagnostic method in Croatia in 1958, when Prof. Budak received a three-channel electromyography device called DISA, the first of its kind in the Balkans, as a gift from UNICEF. The development of electromyography at the Department was carried out under the expert guidance of Franjo Gračanin, MD (the first official tests were performed in 1963), and Ruža Sabol was also one of the experts who were using this method. For a brief period of time, intense cooperation was established with the paediatricians (P. Žeškov), regarding diagnostics in children. In collaboration with ORL specialists (F. Marinović), tests were performed on the laryngeal inlet, and in collaboration with the ophthalmologists (N. Laktić, MD and S. Padovan), the extraocular and intraocular muscles were examined. In addition to that, in collaboration with the dermatologists (A. Gospodnetić) muscle changes in patients with polymyositis and systemic lupus erythematosus were examined, and cases of myasthenia gravis were examined in collaboration with the neurologists (using the Tensilon test). After the departure of Prof. Gračanin, MD to Ljubljana, Prof. Zlatko Domljan took over the diagnostic testing activities at the Department, and in 1968 Prim. Čedo Ljubin was entrusted with this task (after he completed his specialty examination and training in Ljubljana). In 1963, neurologists started getting increasingly intrigued by this method, and this was also the year in which the collaboration with our renowned expert in this field, Prof. Anica Jušić started. Her first training in this field was done at this Department, and after she realised just how valuable the method is, she went to Munich for the purpose of further professional development. At the same time as the EMNG method, diagnostics using low-frequency currents, the I/t curve (intensity-time curve) or electrostimulation, was developed, which was first performed in Croatia in 1962 by Ruža Sabol, MD. Prim. Ljubin worked at the laboratory for electromyography and electrodiagnosis, and this work was later performed by several specialists such as Prim. Maja Dubravica, MD, PhD, Prim. Astrid Marčić, MD, and Prim. Fani Doko Guina, PhD. According to the criteria of the World Health Organization, the institute was a model institution for physical medicine and rehabilitation. Due to

1964. u München na daljnje usavršavanje. Istodobno s metodom EMNG-a razvijala se i dijagnostika niskofrekventnim strujama I/t-krivulja (intenzitetno-vremenska krivulja) ili elektrostimulogram, koji je prvi u Hrvatskoj 1962. učinila dr. Ruža Sabol. U laboratoriju za elektromiografiju i elektrodijagnostiku uz prim. Ljubina poslije su radili i liječnici specijalisti prim. dr. sc. Maja Dubravica, prim. dr. Astrid Marčić, a kasnije i prim. dr. sc. Fani Doko Guina. Zavod je, prema kriterijima SZO-a, bio ogledna ustanova za fizikalnu medicinu i rehabilitaciju. Tako je u toku turneje po tada Istočnoj Europi 1963. Zagreb posjetio ekspert SZO-a prof. Howard Rusk, predstojnik Odjela za fizikalnu medicinu i rehabilitaciju Medicinskog fakulteta Sveučilišta u New Yorku, koji je dao najbolje ocjene za rad i organizaciju Zavoda. Zavod i prof. Budak osobno dali su važan doprinos podizanju stručne razine defektologa (danas rehabilitatora), kao i u osnivanju tadašnje Više defektološke škole, danas Edukacijsko-rehabilitacijskog fakulteta, 1962. godine. Reorganizacijom zdravstvenog sustava od 31. prosinca 1966., Zavod 1. siječnja 1967. ponovno postaje dio Bolnice, djeluje kao Odjel za fizikalnu medicinu i rehabilitaciju, sa 64 postelje u stacionaru i s polikliničkom službom.

Nakon prof. Budaka u prijelaznom razdoblju predstojnik Odjela bio je dr. Mijo Rudar, a od 1. svibnja 1967. za predstojnika je izabran prof. dr. sc. Ferdo Licul, koji je došao iz Rijeke, gdje je u Općoj bolnici



FIGURE 2. / SLIKA 2.
Prof. dr. Ferdo Licul,
Head of the Department / Predstojnik klinike
1967–1981.

»Braća dr. Sobol« osnovao i razvio službu fizikalne medicine, rehabilitacije i reumatologije. Od 21. siječnja 1971. Odjel postaje Klinika za fizikalnu medicinu i rehabilitaciju Stomatološkog fakulteta Sveučilišta u Zagrebu (1973.), a voditelj katedre istoimenog predmeta

this, in 1963, the prominent expert and physician of the World Health Organization and the chairman of the Institute of Physical Medicine and Rehabilitation at New York University, Howard Rusk, visited Zagreb during his tour of the then territory of Eastern Europe. During his visit, Husk assessed that the operation and organisation of the Department were at the highest level possible. The Department and Prof. Budak played a significant role in raising the professional level of special education teachers (today known as educational rehabilitators), as well as in the establishment of the then College of Special Education, today known as the Faculty of Education and Rehabilitation Sciences, which was founded in 1962. With the reorganisation of the healthcare system on 31 December 1966, the Department became a part of the hospital once again, on 1 January 1967. It started operating as the Department of Physical Medicine and Rehabilitation, with 64 inpatient beds and an outpatient service.

In the transitional period, after the departure of Prof. Budak, Mijo Rudar, MD became the head of the Department, and on 1 May 1967 this role was assigned to Prof. Ferdo Licul, MD, PhD, who came to work at the Department from Rijeka, where he founded and developed the Unit of Physical Therapy, Rehabilitation and Rheumatology at the *Braća dr. Sobol* General Hospital. On 21 January 1971, the Department became the Department of Physical Medicine and Rehabilitation of the School of Dental Medicine of the University of Zagreb (1973). The head of this Department, which bore the same name as its course, was Prof. Licul, who became an Associate Professor at the School of Dental Medicine in 1974. Prof. F. Licul was also the author of several books such as *Elektroterapija, elektrodijagnostika* (in English: "Electrotherapy, Electrodiagnostics") (published in 1971) and *Elektrodijagnostika i elektroterapija* ("Electrodiagnostics and Electrotherapy") (published in 1981), which was the first book of this kind in our region. Moreover, Prof. Licul devoted the first part of the second book to the foundations of physics, biophysics, electrical technology, electronics, and the physiology of the neuromuscular system. Teamwork, focused on the field of physical medicine and rehabilitation, continued to be the main focal point of the Department. It is definitely worth mentioning that one of the segments of the Department's operation that developed the most during that time, was the (re)habilitation of children with neurodevelopmental disorders. Our hospital is still the leading institution in this field, and it has an exceptionally long tradition in dealing with topics related to it. In the beginning, the segment of (re)habilitation of children was under the guidance of Prof. Ruža Sabol. Soon after, Prof. Milena Stojčević Polovina, MD, PhD, in collaboration with her colleagues Prim. Margita Klobučar,

bio je prof. Licul, koji je na istom fakultetu 1974. postao izvanredni profesor. F. Licul je napisao knjige *Elektroterapija, elektrodijagnostika* (1971.) te *Elektrodijagnostika i elektroterapija* (1981.), prve knjige u nas iz tog područja, pri čemu je prvi dio drugonavedene knjige posvetio temeljima fizike, biofizike, električnoj tehnologiji, elektronici i fiziologiji neuromišićnoga sustava. I dalje je glavni smjer Klinike timski rad, usredotočen na fizikalnu medicinu i rehabilitaciju. Napose je vrijedno istaknuti jedan segment djelovanja klinike koji se najviše razvio u tom vremenu, a to je (re)habilitacija djece s neurorazvojnim smetnjama, u čemu naša bolnica prednjači i ima vrlo dugu tradiciju. U početku je segment (re)habilitacije djece bio pod vodstvom prof. Ruže Sabol, a ubrzo je prof. dr. sc. Milena Stojčević Polovina u suradnji s prim. dr. Margitom Klobučar i kasnije prim. dr. sc. Fani Doko Guina razvila intenzivnu i značajnu aktivnost u smislu razvoja polivalentne (re)habilitacije djece ometene u razvoju. Prof. Stojčević Polovina bila je voditeljica organizacijske jedinice (najprije odsjeka, a potom odjela) za rehabilitaciju i rehabilitaciju djece ometene u razvoju od 1973., kao i Poliklinike za djecu ometenu u razvoju od 1974. do 2004. godine. Prof. Stojčević Polovina još 1973. uvida važnost i započela je s uvođenjem rane i super-rane rehabilitacije djece, tada kao novine u medicinskoj literaturi i kliničkoj praksi. Godine 1974. prvi put su primijenjene rehabilitacijske tehnike kod djeteta u inkubatoru, a od 1975. se započinje s rehabilitacijom u rodilištu Bolnice, kao i s interdisciplinarnim timskim praćenjem djece s čimbenicima rizika, što je nastavljeno sve do danas.

Nažalost, nema cjelovitog popisa liječnika koji su radili u Klinici, a uz već prethodno navedene vrijedno je spomenuti liječnike specijaliste za koje je poznato da su radili i ostavili trag na klinici, neki još od vremena kad je predstojnik bio prof. Budak, a potom i prof. Licul. Uz ranije spomenute to su: dr. Aleksandar Klimek, dr. Vladimir Pajas, dr. Valerija Pavletić, dr. Ljerka Gruis-Globarević, dr. Drago Radej, dr. Mateja Ivetta i prim. dr. Fatima Krajina.

Od 1. veljače 1981. do 1. lipnja 1985. predstojnik Klinike bio je prof. dr. sc. Franjo Gračanin. On je naglasak aktivnosti usmjerio na neurološku rehabilitaciju, a posebno je razvijao funkcionalnu elektrostimulaciju i biološku povratnu spregu, u kojim je područjima napose stekao velik međunarodni ugled. Utemeljio je Jedinicu za bol, a jedini je naš stručnjak iz fizikalne medicine i rehabilitacije koji je napisao poglavlje u tako prestižnoj knjizi kao što je tada bila *Krusen's Handbook of Physical Medicine and Rehabilitation*.

Od 1. kolovoza 1985. predstojnik Klinike bio je prof. dr. sc. Ivo Jajić. Njegovim dolaskom Klinika postaje klinikom Medicinskog fakulteta Sveučilišta u Zagrebu (22. listopada 1987.). Preimenovana je najprije u Klini-

MD, and Prim. Fani Doko Guina, PhD, developed an intensive and significant activity in terms of the development of polyvalent (re)habilitation of children with developmental disorders. In 1973, Prof. Stojčević Polovina became the head of the organisational unit (at first, she was the head of the Division's OU, and following that, the head of the Department's OU) for habilitation and rehabilitation of children with developmental disorders. From 1974 to 2004 she was the head of the Polyclinic for children with developmental disorders. As early as 1973, Prof. Stojčević Polovina recognised the importance of and started introducing the early and super-early rehabilitation of children, which was then a novel method in medical literature and clinical practice. In 1974, rehabilitation techniques were used for the first time on a child in an incubator, and in 1975, rehabilitation was introduced as a new method at the maternity ward of our hospital, as well as in the interdisciplinary team follow-up of children with risk factors, and it is still used to this day.

Unfortunately, there is no complete list of doctors who worked at the Department. In addition to the aforementioned experts, it is worth mentioning the specialists who worked at the Department and left their mark on it. Some of these experts were employees of the Department at the time when Prof. Budak was its head, and some of them worked there when Prof. Licul was assigned this title. In addition to the aforementioned experts, the physicians who are worth mentioning are the following: Aleksandar Klimek, MD, Vladimir Pajas, MD, Valerija Pavletić, MD, Ljerka Gruis-Globarević, MD, Drago Radej, MD, Mateja Iveta, and Prim. Fatima Krajina, MD.

From February 1981 to 1 June 1985, Prof. Franjo Gračanin, MD, PhD was the head of the Department. He focused his activities on neurological rehabilitation, and his work was especially centred around the development of functional electro-stimulation and biological feedback. The mentioned areas were the fields in which he became internationally renowned. In addition to that, he founded the Clinical Unit for Pain, and he was the only specialist in Physical Medicine and Rehabilitation in our country to ever write a chapter in the most prestigious physiatry book of the time – *Krusen's Handbook of Physical Medicine and Rehabilitation*.

On 1 August 1985, Prof. Ivo Jajić, MD, PhD became the head of the Department. After his appointment, on the 22 October 1987, the Department became the University Department of the School of Medicine, University of Zagreb. The Department was first named the Department of Physical Medicine, Rehabilitation and Rheumatology, and it was later renamed the Department of Rheumatology, Physical and Rehabilitation Medicine because, when Prof. Jajić was the head of the Department, the professional and scientific activities



FIGURE 3. / SLIKA 3.
Prof. dr. Franjo Gračanin,
Head of the Department / Predstojnik klinike
1981–1985.

ku za fizikalnu medicinu, rehabilitaciju i reumatologiju, a poslije u Kliniku za reumatologiju, fizikalnu medicinu i rehabilitaciju, jer su pod njegovim vodstvom stručne i znanstvene aktivnosti općenito usmjerene više prema reumatologiji. U vrijeme Domovinskoga rata klinika je bila uključena u rehabilitaciju ozljeđenika, a vrijedno je napomenuti da su pojedini njezini sadašnji djelatnici bili istaknuti aktivni sudionici u ratu. Godine 1999. Klinika je postala Referentni centar za upalne reumatske bolesti Ministarstva zdravstva RH. Uz stručni rad i nastavu na Medicinskom fakultetu i nekim drugim visokoškolskim ustanovama prof. Jajić je razvio opsežnu publicističku djelatnost, uključivo i objavljivanje većeg broja knjiga iz područja reumatologije, fizikalne medicine i rehabilitacije. Posebno je vrijedno istaknuti njegove pivotalne radove o razumijevanju etiopatogeneze, kliničkoj i radiološkoj prezentaciji ankilozantnoga spondilitisa i hipertrofične osteoartropatije. Prof. Jajić je organizirao brojne stručno-znanstvene skupove, intenzivirao je međunarodnu suradnju, a bio je član Britanskog društva reumatologa (*British Society of Rheumatology*) i začasni član nekoliko europskih reumatoloških društava, te naš predstavnik u više međunarodnih foruma i odbora. Također, prof. Jajić je bio predsjednik Sekcije za reumatologiju Hrvatskoga liječničkog zbora (od 1977. do 1985.), predsjednik i potpredsjednik Udruženja reumatologa Jugoslavije (1982. – 1986.), predsjednik Hrvatskoga reumatološkog društva HLZ-a (1996. – 1998.) i drugi po redu predsjednik Hrvatskoga vertebrnološkog društva HLZ-a (nakon prof. dr. Pavla Dürriгла). Utemeljio je prvi registar reumatskih bolesti u Hrvatskoj, koji, nažalost, nije uspio zaživjeti. Klinika je od 1996. do 1998. bila sjedište Katedre za fizikalnu medicinu i opću rehabili-

of the Department were more focused on rheumatology. During the Croatian War of Independence, the Department was involved in the rehabilitation of the injured, and it is worth noting that some of the current employees of the Department served in the military during the war. In 1999, the Department became the Referral Centre for Inflammatory Rheumatic Diseases of the Ministry of Health of the Republic of Croatia. Prof. Jajić did not only participate in the professional and scientific activities of the School of Medicine, University of Zagreb. He was also one of the lecturers at this institution and he was involved in the publication of various works and numerous books in the field of rheumatology, physical medicine, and rehabilitation. It is extremely important to highlight his pivotal works on etiopathogenesis, clinical and radiological presentation of ankylosing spondylitis and hypertrophic osteoarthropathy. Furthermore, Prof. Jajić organised numerous professional and scientific meetings, and intensified international cooperation. He was a member of the British Society for Rheumatology and a temporary member of several European societies for rheumatology, and he represented Croatia in several international forums and committees. In addition to that, Prof. Jajić was the chairman of the Rheumatology Section Board of the Croatian Medical Association (from 1977 to 1985), the president and vice-president of the Rheumatology Association of Yugoslavia (from 1982 to 1986), the president of the Croatian Society for Rheumatology of the Croatian Medical Association (from 1996 to 1998) and the second ever president of the Croatian Society for Vertebrology of the Croatian Medical Association (its first president was Pavao Dürigl). He was the founder of the first Register of Rheumatic Diseases in Croatia, which unfortunately, did not last for a long time. From 1996 to 1998, the Department was the seat of the Department for Physical Medicine and General Rehabilitation of the School of Medicine in Zagreb, and Prof. Jajić was the main instigator and the first head of the postgraduate professional study programme in Physical Medicine and Rehabilitation. He was also the founder of the *Fizikalna medicina i rehabilitacija* journal ("Physical Medicine and Rehabilitation") (established in 1984), and from 1991 to 1998 he was the editor-in-chief of the *Reumatizam* journal ("Rheumatism"). In 1982 he became an active member of the Croatian Academy of Medical Sciences (CAMS, in Croatian: AZMH), an honorary member of the Croatian Medical Association and an honorary member of the Croatian Society for Rheumatology. He was especially renowned for his work in the education of young generations of physiatrists and rheumatologists. All things considered, it can be said that Prof. Ivo Jajić significantly contributed to the improvement of rheumatology and physical medicine and rehabilita-

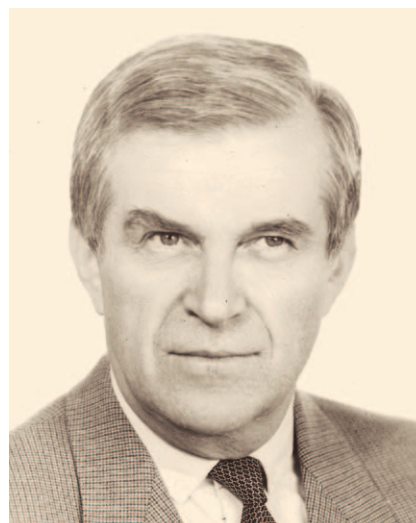


FIGURE 4. / SLIKA 4.
Prof. dr. Ivo Jajić,
Head of the Department / Predstojnik klinike
1985.–2001.

taciju Medicinskog fakulteta u Zagrebu, a prof. Jajić je bio glavni inicijator i prvi voditelj poslijediplomskoga stručnog studija iz fizikalne medicine i rehabilitacije. Utemeljio je časopis *Fizikalna medicina i rehabilitacija* (1984.), a od 1991. do 1998. bio je glavni i odgovorni urednik časopisa *Reumatizam*. Bio je redoviti član Akademije medicinskih znanosti Hrvatske (AMZH) od 1982., počasni član Hrvatskoga liječničkog zbora i počasni član Hrvatskoga reumatološkog društva. Posebno je zapažen njegov rad u edukaciji mladih naraštaja fizijatarata i reumatologa. Sveukupno, prof. Ivo Jajić je značajno pridonio unaprjeđenju reumatologije i fizikalne medicine i rehabilitacije u Jugoslaviji i u Hrvatskoj, te međunarodnoj vidljivosti. Dobitnik je više priznanja među kojima se posebno ističu: nagrada Vlade Republike Hrvatske za znanstveni rad "Ruđer Bošković" (1987.), nagrada Hrvatskoga liječničkog zbora "Ladislav Rakovac" (1993.) i Nagrada grada Zagreba za 2000. godinu. Također, uvršten je u knjigu najpoznatijih svjetskih kliničara i znanstvenika koji su doprinijeli istraživanju ankilozantnog spondilitisa, tadašnjeg vodećeg reumatologa, profesora J. M. H. Molla iz Centra za Reumatske bolesti, Sheffield (UK) (1987.). Prof. Jajić bio je glavni inicijator osnutka i prvi predsjednik Hrvatske lige protiv reumatizma (1992.), tada jedine neprofitne udruge na državnoj razini koja se bavi promicanjem važnosti reumatskih bolesti, a koja je proistekla iz Društva reumatičara, osnovanog 1982. godine. Za vrijeme predstojništva prof. Jajića, a na inicijativu prof. dr. sc. Stojčević Polovine, 2000. godine na klinici je ustanovljen program „Majka – dijete“.

Nakon umirovljenja prof. Jajića 2001. v. d. predstojnika Klinike postala je prim. dr. sc. Maja Dubravica. Dok je prim. Dubravica bila na čelu klinike poboljšani su

tion in former Yugoslavia and Croatia, and he put our country on the map in that field. He received several awards for his work, and some of the most prestigious ones are the following: the Annual Award of the Ruđer Bošković Institute in the category of the Published Scientific Paper (1987), the "Ladislav Rakovac" award of the Croatian Medical Association (1993) and the City of Zagreb Award (2000). In addition to that, he was included in the book of the world's most prominent clinicians and scientists who contributed to the research of ankylosing spondylitis, which was authored by the leading rheumatologist of that time Prof. J. M. H. Moll from the Sheffield Centre for Rheumatic Diseases, Sheffield (UK) (1987). Furthermore, Prof. Jajić was the main initiator of the establishment of the Croatian League against Rheumatism (1992) and its first president. At that time, this was the only non-profit association in the country, dedicated to raising awareness of the importance of rheumatic diseases. Moreover, it was a legal successor of the Association of Rheumatic Patients of the City of Zagreb, which was established in 1982. In 2000, during the time when Prof. Jajić, MD, PhD was the head of the Department, the programme "Mother and Child" was established, on the initiative of Prof. Stojčević Polovina, MD, PhD.

After Prof. Jajić's retirement in 2001, Prim. Maja Dubravica, MD became the acting head of the Department. During the time when Prim. Dubravica was the head of the Department, the working conditions of the outpatient unit for the rehabilitation of children were improved and the unit was given the space located on the fifth floor of building number 5 (in 2004). In addition to that, an Outpatient Unit for the Diagnostic Ultrasound of the Locomotor System was established at the Department, and Tomislav Nemčić, MD was appointed as its head in 2002.

When Prim. Dubravica took on another job at another institution in 2005, Professor Simeon Grazio, MD, PhD, who was appointed head of the Department on 7 October 2005, took on her role. In addition to that, he continued to act as the head of the Department and accepted his mandate for the following four terms: 2009, 2011, 2015 and 2019. From that moment on, the general activities of the Department became more focused on the early diagnosis and treatment with the application of the newest treatment modalities, and the principle of multidisciplinary continued to be used in processing and treatment. The casuistry remained the same in the basic segments, but with an even greater emphasis on spondyloarthritis, vertebral and vertebrogenic syndromes, osteoporosis, rare diseases, as well as post-traumatic and oncological rehabilitation. The latter two were introduced in accordance with the expansion of the Department, that is, its joining with the Department of Traumatology and the Institute for Tu-

prostorni uvjeti polikliničkog dijela namijenjenog rehabilitaciji djece, dobivanjem prostora na V. katu zgrade br. 5 (2004.). Također, na klinici je ustanovljena redovita ambulanta za dijagnostički ultrazvuk lokomotornoga sustava, s kojom je započeo dr. Tomislav Nemčić (2002.).

Odlaskom prim. dr. sc. Dubravice u drugu ustanovu 2005., na njezino mjesto došao je doc. dr. sc. Simeon Grazio, koji je imenovan prestojnikom klinike 7. listopada 2005., a svoj mandat je potvrdio u sljedeća četiri navrata (2009., 2011., 2015. i 2019.). Sveukupne aktivnosti klinike naglašenije su usmjerene na ranu dijagnostiku i liječenje uz primjenu najsuvremenijih modaliteta, a nastavljeno je s načelom multidisciplinarnosti u obradi i liječenju. Kazuistika je u osnovnim segmentima ostala ista, ali, s još većim naglaskom na spondiloartritis, vertebralne i vertebrogene sindrome, osteoporozi, rijetke bolesti, kao i posttraumatološku i onkološku rehabilitaciju (potonje dvoje sukladno proširenju, tj. udruživanju s Klinikom za traumatologiju i Institutom za tumore i formiranjem kliničkoga bolničkoga centra). Pod vodstvom prof. Grazija klinika je 2007. postala Referentni centar za spondiloartropatije Ministarstva zdravstva Republike Hrvatske, a naziv je u suvremenijoj inačici kao Referentni centar za spondiloartritis zadnji put obnovljen 2019. na razdoblje od pet godina. Sukladno tomu naglasak u radu je na dijagnostici, liječenju i rehabilitaciji bolesnika s tom grupom upalnih reumatskih bolesti, gdje je klinika postigla značajne stručne i znanstvene rezultate i u čemu je prepoznata u Hrvatskoj i šire. Uz „velike“ vizite (jedanput na tjedan), obnovljena je praksa održavanja redovitih sastanaka stručnog kolegija i stručnih predavanja (za liječnike i za fizioterapeute) te tjednih kliničko-radioloških sastanaka (u suradnji s radiolozima specijaliziranim za lokomotorni sustav). Uvedeno je kvantificirano praćenje bolesnika s upalnim reumatskim bolestima, što je važno u provođenju načela liječenja prema cilju (engl. *Treat to Target* – T2T). U vezi s tim reumatološke bolesnike pratimo uporabom validiranih indeksa – upitnika (npr. DAS, HAQ, SF-36, BASDAI, BASFI, WOMAC), a doprinos naše Klinike jest da smo validirali i publicirali hrvatsku inačicu upitnika specifičnih za ankilozantni spondilitis (BASFI, BASDAI), što je za sada jedina formalna validacija upitnika za jednu reumatsku bolest u Hrvatskoj (objavljeno u časopisu *Reumatizam*, 2009.). U segmentu (re)habilitacije djece u kliničku praksu naše klinike uveden je test neuromotoričkih sposobnosti za djecu od prohodavanja do šeste godine života, koji je izradila prof. dr. sc. Valentina Matijević.

Godine 2012. oformljena je Dnevna bolnica za odrasle, čime su dobiveni uvjeti za primjenu diferentne terapije, ponajprije bioloških lijekova intravenskim putem, kao i dijagnostičke obrade, liječenja i rehabilitacije bolesnika koji ne trebaju prekonozni boravak u Kli-

mours and the establishment of the University Hospital Centre. In 2007, during the time when Prof. Grazio was its head, the Department became the Referral Centre for Spondyloarthropathies of the Ministry of Health of the Republic of Croatia, and its name was last changed in 2019, when it was renamed the Referral Centre for Spondyloarthritis, and it was decided that it shall bear the same name for the following period of five years. In accordance with that, the Department is mainly focused on the diagnosis, treatment, and rehabilitation of patients with this group of inflammatory rheumatic diseases. This is the field in which the Department has achieved significant professional and scientific results and gained national and international recognition. In addition to the reintroduction of making grand rounds (once a week), the practice of holding regular meetings of the professional board and expert lectures (for doctors and physiotherapists) and weekly clinico-radiological meetings (in collaboration with radiologists specialising in diseases of the locomotor system) had been reintroduced as well. Quantified follow-up of patients with inflammatory rheumatic diseases was introduced, which is important in implementing the *Treat to Target* strategy (T2T). In this regard, we performed the follow-up of patients with rheumatic diseases using validated disease activity indices – questionnaires (such as DAS, HAQ, SF-36, BASDAI, BASFI, WOMAC). Another special contribution of our Department is that we have validated and published the Croatian version of questionnaires specific for ankylosing spondylitis (BASFI, BASDAI), which is currently the only formal validation of a questionnaire for a rheumatic disease in Croatia (published in the *Rheumatism* journal in 2009). In the field of (re)habilitation of children, the neuromotor skills test for children from their initial gait stage to the age of six was introduced into the clinical practice of our Department. This test was created by Prof. Valentina Matijević, MD, PhD.

In 2012, the Outpatient Clinic for Adults was established, which helped create appropriate conditions for the application of different therapies, primarily of biologic drugs administered intravenously, as well as diagnostic processing, treatment and rehabilitation of patients who do not have to stay overnight at the Department. In 2015, the Outpatient Clinic for Children was also established, and due to the different casuistry, the Outpatient Clinic for Children and the Outpatient Clinic for Adults were created as two separate units. As an example of multidisciplinary approach, we must mention the unit dedicated to the care of patients with an extremely rare hereditary disease, fibrodysplasia ossificans progressiva, which was established at the Sestre milosrdnice UHC over 15 years ago, under the guidance of Prof. Grazio. This unit, that is, team, con-

nici. Godine 2015. ustanovljena je i Dnevna bolnica za djecu, a zbog različitosti kazuistike odvojene su Dnevna bolnica za djecu i Dnevna bolnica za odrasle. Kao primjer multidisciplinarnoga rada navodimo primjer tima za skrb bolesnika s vrlo rijetkom nasljednom bolešću, *fibrodysplasia ossificans progressiva*, koja je prije više od 15 godina osnovana pod vodstvom prof. Grazija u sklopu KBC-a Sestre milosrdnice i u kojem surađuju specijalisti raznih specijalnosti (fizijatar, reumatolog, otorinolaringolog, onkolog – radioterapeut, pulmolog, urolog, dermatolog, radiolog i dr.), a uključen je i Laboratorij za kalcificirana tkiva Zavoda za anatomiju / Zavod za proteomiku Centra za translacijska klinička ispitivnja Medicinskog fakulteta u Zagrebu. U zadnjih petnaestak godina povećan je kapacitet, napose specijalističko-konzilijarne zaštite, pa su na Klinici uvedene nove ambulante (Ambulanta za spondiloartritise, Ambulanta za osteoporozu – lokacija Vinogradska 29). Kao primjer angažiranosti naših djelatnika vrijedno je navesti da je doc. dr. sc. Valentina Matijević 2015. godine dobila priznanje Ministarstva zdravstva RH za najučinkovitiju liječnicu u specijalnosti fizikalne medicine i rehabilitacije, što ju je prema evidenciji HZZO-a uvrstilo među deset najučinkovitijih liječnika te godine. Glede dijagnostičkih mogućnosti nastavljena je tradicija, a provedena su i poboljšanja u radu laboratorija za elektrofiziološku dijagnostiku, dok su primjenom dijagnostičkog ultrazvuka s osnaženim *dopplerom*, uz nabavu novoga suvremenoga uređaja i edukaciju liječnika značajno unaprijeđene mogućnosti u ranom i preciznom dijagnosticiranju različitih bolesti i stanja lokomotornoga sustava. Stoga je na poticaj i podršku prof. Grazija edukaciju u tom smislu završilo još troje liječnika klinike.

U farmakološkom liječenju od 2006. na klinici se primjenjuju biološki lijekovi za liječenje bolesnika s teškim oblicima najčešćih upalnih reumatskih bolesti. Time se naša Klinika svrstala uz bok drugih vodećih ustanova. Također, napretci su postignuti i glede nefarmakoloških modaliteta dijagnostike, liječenja i rehabilitacije. Tako su pojedini liječnici i fizioterapeuti educirani u najvažnijim funkcionalnim dijagnostičkim i terapijskim metodama (npr. Bobath, Vojta, McKenzie, metoda prisilno induciranih pokreta i dr.), što osigurava visoku razinu kvalitete dijagnostike i (re)habilitacije. Osim toga, učinkovitost fizikalne terapije povezana je s nabavom novih uređaja za fizikalnu terapiju, uključivo laser, izvantjelesni udarni val, trakciju s računalnom potporom itd. Od 2011. godine započeli smo s organiziranjem fizioterapije prema najsuvremenijemu integriranom modelu pružanja usluga, dok je u zadnjih petnaestak godina poboljšana dostupnost fizioterapijskog tretmana na više organizacijskih djelova KBC-a i u svim jedinicama intenzivnog liječenja, uključivo i vikendom.

sists of various specialists (such as physiatrists, rheumatologists, otorhinolaryngologists, oncologists – radiotherapists, pulmonologists, urologists, dermatologists, radiologists, etc.) who collaborate on various cases, and the Laboratory for Mineralised Tissues of the Department of Anatomy / Department for Proteomics of the Centre for Translational and Clinical Research of the School of Medicine, University of Zagreb are also included in this collaboration. In the last fifteen years, the capacity has been increased, especially in the area of specialist consultative healthcare, so new outpatient units have been introduced at the Department (Outpatient Clinic for Spondyloarthritis and Outpatient Clinic for Osteoporosis, located at Vinogradska 29). As an example of the engagement of our employees, it is worth mentioning that, in 2015, Prof. Valentina Matijević, MD, PhD received an award from the Ministry of Health of the Republic of Croatia as the most effective doctor in the specialty of Physical Medicine and Rehabilitation. According to the records of the Croatian Health Insurance Fund (CHIF), this made her one of the ten most effective doctors of that year. Regarding the diagnostic possibilities, the Department continued to use traditional methods, and improvements have been made in the operation of the Laboratory for Electrophysiological Diagnostics, while the use of contrast-enhanced power Doppler ultrasound, along with the acquisition of a new modern device and the training of physicians, have significantly improved the possibilities for early and precise diagnosis of various diseases and conditions of the locomotor system. In accordance with the aforementioned, it is worth noting that three more doctors who worked at the Department completed their training with the encouragement and support of Prof. Grazio.

Biologic drugs for the treatment of patients with severe forms of the most common inflammatory rheumatic diseases have been used at the Department since 2006. This put our Department on the map and helped it get on the list of the world's leading institutions in this field. In addition to that, progress has been made regarding non-pharmacological modalities of disease diagnosis, treatment, and rehabilitation. Thus, certain doctors and physiotherapists received training in the most important functional diagnostic and therapeutic methods (such as the Bobath, Vojta and McKenzie methods, constraint-induced movement therapy, etc.), which insures a high level of quality in the area of diagnosis and (re)habilitation. In addition to that, the effectiveness of physical therapy was related to the acquisition of new physical therapy devices, including laser, extracorporeal shock wave, computer-assisted traction, etc. In 2011, we have started organising our physiotherapy treatment according to the most modern integrated model of service provision, while in the last

Uočivši potrebu za izjednačavanjem s europskom kvalitetom i kriterijima rada u medicini, Klinika je aplicirala i ispunila kriterije Europske unije koji jamče kvalitetu i održivost specifične djelatnosti kojom se bave te od 9. travnja 2009. ima certifikat za sustav upravljanja prema EN ISO 9001:2000 za dijagnostiku i konzervativno liječenje lokomotornog sustava (zadnja je inačica 9001:2015). Time je postala jedna od svega nekoliko organizacijskih jedinica našeg KBC-a koja ima taj certifikat. Riječ je o međunarodno priznatoj normi koju je uvela Organizacija za standardizaciju (ISO) radi uspostave međunarodnih zahtjeva za Sustave upravljanja kvalitetom. Certifikat se redovito obnavlja te u tom smislu Klinika usmjerava svoje napore.

Klinika je oduvijek imala važnu ulogu u edukaciji. Njezini su djelatnici bili i jesu poticatelji edukacije i edukatori na svim razinama. Nastava na Medicinskom fakultetu Sveučilišta u Zagrebu uključuje diplomski studij, studij na engleskom jeziku, studij sestrištva i poslijediplomski specijalistički studij iz fizikalne medicine i rehabilitacije, a voditeljica potonjega je prof. dr. sc. Zrinka Jajić. Na istom Fakultetu na poticaj prof. Grazija realiziran je izborni predmet *Križobolja – najčešći problem lokomotornog sustava u primarnoj zdravstvenoj zaštiti*. Dolaskom na čelo klinike prof. Grazija, uz proširenje prethodne suradnje s Edukacijsko-rehabilitacijskim fakultetom i Kineziološkim fakultetom, obnovljena je suradnja sa Zdravstvenim veleučilištem u Zagrebu, sa Stomatološkim fakultetom u Zagrebu, Fakultetom za dentalnu medicinu i zdravstvo u Osijeku, kratko vrijeme je provedena i nastava Odjela za lingvistiku Filozofskog fakulteta u Zagrebu, dok su nedavno naši liječnici započeli provođenje nastave za fizioterapeute Sveučilišta Libertas u Zagrebu i Visoke škole u Ivanić Gradu.

Klinika ima dugo iskustvo u provođenju edukacije specijalista i užih specijalista. Tako se na klinici provodila i provodi edukacija specijalizanata (fizikalna medicina i rehabilitacija i manji dio nekih drugih specijalizacija) i užih specijalizanata iz reumatologije. Kontinuirano smo sudjelovali i sudjelujemo u edukaciji liječnika, fizioterapeuta, medicinskih sestara i drugih zdravstvenih djelatnika.

Djelatnici naše Klinike (prof. S. Grazio i prof. Z. Jajić) sudjelovali su u izradi novih programa specijalizacije iz reumatologije, odnosno fizikalne medicine i rehabilitacije, koje su usklađene s europskom regulativom, a prije ulaske Hrvatske u Europsku uniju. Od ožujka 2012. do veljače 2019. prof. Grazio je bio voditelj specijalističkog usavršavanja iz fizikalne medicine i rehabilitacije pri Nacionalnom povjerenstvu za specijalističko usavršavanje doktora medicine Ministarstva zdravstva RH, što je priznanje i samoj klinici, a od veljače 2019. nadalje član je radne grupe za specijalističko usavršavanje iz fizikalne medicine i rehabilitacije

fifteen years, the availability of physiotherapy treatment has been improved in several organisational units of the UHC and in all intensive care units, including on the weekends.

The Department recognised the need to get on the same level of quality and work-related criteria in medicine as other European institutions. In accordance with the aforementioned, it applied for a certain kind of certification and fulfilled the criteria of the European Union that guarantee the quality and sustainability of the particular activity that the Department has been dealing with. Due to this, since 9 April 2009, the Department has been the holder of the **quality** management system certificate in accordance with the EN ISO 9001:2000 standard for the diagnosis and conservative treatment of the locomotor system (the latest version of the certificate is in line with the ISO 9001:2015 standard). Due to this, the Department became one of the few organisational units of our UHC that holds this certificate. This is an internationally recognised standard introduced by the International Organisation for Standardization for the purpose of establishing international requirements for Quality Management Systems. The certificate is regularly renewed, and the Department has given its best efforts in order to keep its activities on the level required by the aforementioned certificate.

Furthermore, the Department has always had an important role in the training and education of its employees, who were and remain to be the instigators of education and educators providing training and education at all levels. The study programmes of the School of Medicine, University of Zagreb include the following programmes: the *Medical Studies in English* graduate study programme, the professional study programme in Nursing and the professional study programme in Physical Medicine and Rehabilitation. The head of the aforementioned study programme is Prof. Zrinka Jajić, MD, PhD. At the incentive of Prof. Grazio, an elective course titled "Low back pain – the most common problem of the locomotor system in primary health care" (in Croatian: *Križobolja – najčešći problem lokomotornog sustava u primarnoj zdravstvenoj zaštiti*) was introduced in the curriculum of the School of Medicine, University of Zagreb. When Prof. Grazio became the head of the Department, in addition to the realisation of more extensive cooperation with the Faculty of Education and Rehabilitation Sciences and the Faculty of Kinesiology, the cooperation with the University of Applied Health Sciences in Zagreb, the School of Dental Medicine, University of Zagreb, the Faculty of Dental Medicine and Health in Osijek, was renewed. Furthermore, the courses of the Department of Linguistics of the Faculty of Humanities and Social Sciences of the University of Zagreb were taught for a

pri istom Ministarstvu. Također, u ime Hrvatskoga društva za fizikalnu i rehabilitacijsku medicinu HLZ-a prof. Grazio je bio koordinator zajedničkoga prijedloga za četiri uže specijalizacije iz fizikalne i rehabilitacijske medicine, kao i voditelj prijedloga uže specijalizacije iz Reumatološko-ortopedske rehabilitacije, čiji je član radne grupe bio doc. Grubišić, dok je voditeljica radne grupe za prijedlog uže specijalizacije iz dječje rehabilitacije bila prof. Matijević (2018.).

U siječnju 2011. Klinika je nakon akreditacijskog postupka i posjeta predstavnika mjerodavnih tijela dobila naziv Centra obuke Europskog odbora za fizikalnu i rehabilitacijsku medicinu (*Training Centre of the European Board for Physical and Rehabilitation Medicine*), što je obnovljeno u veljači 2016. i studenom 2020. godine. U vezi s tim prim. T. Nemčić, prim. T. Nikolić i doc. F. Grubišić stekli su, nakon postupka certifikacije, naslove *Fellow of the European Board of Physical and Rehabilitation Medicine* i *Board Certified Trainer*, isti je naslov polaganjem europskog ispita stekla i dr. J. Marunica Karšaj, dok je prof. Grazio uz naslov *Board Certified Trainer* u međuvremenu dobio naslov *Senior Fellow of the European Board of Physical and Rehabilitation Medicine*.

Djelatnici Klinike aktivno su sudjelovali na brojnim radionicama i tečajevima trajne edukacije te brojnim domaćim i međunarodnim stručno-znanstvenim skupovima. Tako su na primjer u zadnjih dvadesetak godina djelatnici Klinike imali ključnu ulogu u organizaciji, kao članovi znanstvenog i/ili organizacijskoga odbora te kao predavači na godišnjim kongresima Hrvatskoga reumatološkoga društva, kongresima Hrvatskoga društva za fizikalnu i rehabilitacijsku medicinu te nekoliko Mediteranskih kongresa (prof. Grazio je bio član znanstvenog odbora i suvoditelj sekcija Mediteranskih reumatoloških kongresa 2009., 2011., 2014., 2016. i 2018.), te kao predsjednik lokalnog Organizacijskoga odbora Srednjoeuropskoga reumatološkog kongresa, 2018. godine. Djelatnici klinike su od 2006. organizatori i aktivni sudionici tečaja Medicinskog fakulteta u Zagrebu *Izvanzglobni reumatizam – novosti u dijagnostici i liječenju*, održanog pet puta (suvoditelj: prof. Grazio). Također, klinika je bila suorganizator, a prof. Grazio suvoditelj tečaja I. kategorije Medicinskoga fakulteta u Zagreba iz područja osteoartritisa koljena, održanoga dva puta. Doc. Grubišić je bio suvoditelj simpozija *Od sustavnih preglednih radova do Cochrane kliničkih sažetaka u fizikalnoj i rehabilitacijskoj medicini*, održanoga u Zagrebu 2019. godine. Klinika je kao Referentni centar bila suorganizator tečaja *MRI training* u području promjena na sakroilijakalnim zglobovima održanoga u Zagrebu 2019., na kojem je prof. Grazio održao i predavanje i vodio radionicu. Klinika je bila značajno uključena u aktivnosti svjetske kampanje *Desetljeća kostiju i zglobova* od samog početka djelovanja

brief period of time. Moreover, our physicians have only recently started teaching classes for physiotherapists at the Libertas International University in Zagreb and at the "Ivanić-Grad College" institution of higher education in Ivanić Grad (in Croatian: *Visoka škola Ivanić-Grad*).

The Department has a long tradition and experience in conducting training and education for specialists and subspecialists. Thus, residency training (in the field of Physical Medicine and Rehabilitation and a few other medical specialties) and subspecialty fellowship training in Rheumatology was conducted and continues to be conducted at the Department. We have continuously participated and continue to participate in the training of physicians, physiotherapists, nurses and other health professionals.

The employees of our Department (Prof. S. Grazio and Prof. Z. Jajić) participated in the establishment of new medical specialty programmes in Rheumatology, i.e., Physical Medicine and Rehabilitation, which were harmonised with EU regulations, even before Croatia joined the EU. From March 2012 to February 2019, Prof. Grazio was the head of the specialist training in Physical Medicine and Rehabilitation of the National Authority for Specialty Training of Medical Doctors in Croatia of the Ministry of Health of the Republic of Croatia, which is a tremendous accomplishment for the Department. In addition to that, he is the member of the Working Group for Specialist Training in Physical Medicine and Rehabilitation of the Ministry of Health of the Republic of Croatia. Moreover, on behalf of the Croatian Society of Physical and Rehabilitation Medicine of the Croatian Medical Association, Prof. Grazio served as a coordinator of the joint proposal for four subspecialties in Physical and Rehabilitation Medicine, as well as the initiator of the proposal for the subspecialty in the field of Rheumatology and Orthopaedic Rehabilitation. Assistant Professor Grubišić, MD was the member of the Working Group for Rheumatology and Orthopaedic Rehabilitation, while Prof. Matijević was the head of the Working Group for the proposal of the subspecialty in the Rehabilitation of Children. (2018).

In January 2011, after the accreditation procedure and the official visit of the competent authorities, the Department was named the Training Centre of the European Board of Physical and Rehabilitation Medicine, and this name was renewed in February 2016 and November 2020. In accordance with the aforementioned and after the certification process, Prim. T. Nemčić, Prim. T. Nikolić and Assistant Prof. F. Grubišić have obtained the following titles: *Fellow of the European Board of Physical and Rehabilitation Medicine* and *Board Certified Trainer*. Furthermore, J. Marunica Karšaj, MD, passed the exam of the European Board of

Nacionalnoga odbora u Hrvatskoj, 2004., dok je prof. Grazio bio tajnik Hrvatskoga nacionalnog odbora *Dezsetljeća kostiju i zglobova 2010. – 2020.* (od 2011. s dodatnim nazivom *Saveza za mišićnokoštano zdravlje*). Tako je naša klinika bila organizator ili suorganizator svih simpozija povodom Svjetskog dana kralježnice, koji se održava svake godine u listopadu, a u posljednjih sedam godina pod pokroviteljstvom Hrvatske akademije znanosti i umjetnosti. Voditelj svih simpozija, osim prvoga (voditeljica prof. Z. Jajić), bio je prof. Grazio. Na simpozijima su liječnici Klinike uvijek imali zapaženu ulogu te su redovito aktivno sudjelovali. Na simpozijima su obrađene vrlo raznolike teme iz područja vertebrologije, bili su vrlo dobro posjećeni i od struke ocijenjeni kao visokokvalitetni. Također, klinika je bila suorganizator više simpozija povodom obilježavanja Svjetskog dana traume. Djelatnici klinike su napose bili aktivni u organiziranju i provođenju mnogobrojnih predavanja, tečajeva i radionica s ciljem ranog prepoznavanja i odgovarajućeg liječenja i rehabilitacije bolesnika s upalnim reumatskim bolestima, križoboljom, osteoporozom i djece s neurorazvojnim poremećajima. Na primjer, u sklopu akcije „Ne okrećite leđa križobolji“, to se nastojalo još više osnažiti. Naime, Klinika je, uz Hrvatsku ligu protiv reumatizma, prvi put u Hrvatskoj 2015. obilježila Svjetski dan spondiloartritisa (29. travnja), što je bio i početak te akcije, koja je imala za cilj rano prepoznavanje i odgovarajuće liječenje bolesnika s ovom grupom upalnih reumatskih bolesti. Akcija je bila usmjerena na opće pučanstvo, bolesnike s kroničnom križoboljom, kao i na liječnike, ponajprije one obiteljske medicine, a postoji mogućnost narudžbe i pregleda bolesnika s upalnom križoboljom i sumnjom na aksijalni spondiloartritis kod subspecialista reumatologa izvan redovite liste čekanja. Od prosinca 2016. provodeći je neprofitni projekt „Quantum PsA – Hrvatska“, prvenstveno usmjeren na dermatologe i reumatologe, a koji je implementiran u KBC-u Sestre milosrdnice. U okviru obaju projekata ustanovljen je postupnik što ranijeg i pravilnijeg upućivanja, prepoznavanja i odgovarajućeg liječenja bolesnika s aksijalnim spondiloartritisom odnosno psoriatičnim artritisom, s ciljem smanjenja stupnja nesposobnosti i podizanja kvalitete života tih bolesnika. Radi podizanja sveukupne svijesti o važnosti radne sposobnosti u bolesnika s mišićno-koštanim bolestima i stanjima osnovana je Nacionalna koalicija „Sposoban za rad – Hrvatska“ (*Fit for Work Croatia*) u sklopu projekta EU-a *Fit for Work*, a sve radi podizanja sveukupne svijesti o važnosti radne sposobnosti i ostvarenja njezina što duljeg trajanja u bolesnika s mišićno-koštanim bolestima i stanjima. Djelatnici naše Klinike (prof. dr. sc. Simeon Grazio i doc. dr. sc. Frane Grubišić) njezini su aktivni sudionici i prisustvovali su osnivačkom sastanku u Hrvatskom saboru 13. svibnja 2015., dok je na sljedećoj sjednici Koalicije prof. Grazio izabran za

Physical and Rehabilitation Medicine, and by doing so she was awarded the same title as the aforementioned physicians. Moreover, in addition to the title of *Board Certified Trainer*, Prof. Grazio was also awarded the title of *Senior Fellow of the European Board of Physical and Rehabilitation Medicine*.

The employees of the Department actively participated in numerous workshops and courses of continuing education, as well as various national and international scientific and professional meetings. Over the last twenty years, the employees of the Department played a key role in the organisation of committees, as members of scientific and/or organisational committees and as lecturers at the annual congresses of the Croatian Society for Rheumatology, the congresses of the Croatian Society of Physical and Rehabilitation Medicine and several Mediterranean Congresses of Rheumatology. Prof. Grazio was the member of the Scientific Advisory Committee and the co-leader of various sections at the Mediterranean Congress of Rheumatology in 2009, 2011, 2014, 2016 and 2018. In addition to that, he was the president of the local Organisational Committee at the Central European Congress of Rheumatology in 2018. Since 2006, the employees of the Department have been organising and actively participating in the course titled "Extra-Articular Rheumatism and Related Conditions – Novelties in Diagnosis and Treatment" (in Croatian: *Izvanzglobni reumatizam – novosti u dijagnostici i liječenju*) of the School of Medicine of the University of Zagreb. The co-leader of this course was Prof. Grazio. In addition to that, the Department was the co-organiser and Prof. Grazio was the co-leader of the 1st category course of the School of Medicine, University of Zagreb in the field of osteoarthritis of the knee, which was held two times. Assistant Professor Grubišić was the co-leader of the "From Systematic Reviews to Cochrane Clinical Abstracts in Physical and Rehabilitation Medicine" Symposium (in Croatian: *Od sustavnih preglednih radova do Cochrane kliničkih sažetaka u fizikalnoj i rehabilitacijskoj medicini*), which was held in Zagreb in 2019. As a Referral Centre, the Department was the co-organiser of the "MRI Training" course in the field of sacroiliac joint changes, which was held in Zagreb in 2019. Prof. Grazio held a lecture and a workshop at that same course. The Department was extremely involved in the activities of the global campaign titled The Bone and Joint Decade ever since the establishment of the National Board of the Bone and Joint Decade in Croatia in 2004, while Prof. Grazio was the secretary of the Croatian National Board of the Bone and Joint Decade from 2010 to 2020 (from 2011 with the addition of the Alliance for Musculoskeletal Health). Thus, our Department was the organiser or co-organiser of all symposia on the occasion of the World Spine

voditelja Radne grupe za križbolju. Također, održane su i radionice s temom ranog otkrivanja djece sa neurorizičnim simptomima, jer su istraživanja pokazala da se pravovremenim uključivanjem takve djece u programe postižu optimalni rezultati habilitacije. Prof. Grazio je bio suorganizator i jedan od predavača na tečajevima o pisanju znanstvenih radova, komunikaciji i recenziranju održanih u sklopu godišnjega kongresa Hrvatskoga reumatološkoga društva ili Srednjoeuropskoga reumatološkog kongresa 2017., 2018. i 2019. godine, a u suradnji s prof. Armenom Y. Gasparyanom i prof. Olenom Zimba, kao i tečaja „Pisanje i kritičko čitanje znanstvenoga rada“ održanoga tri puta 2018. godine, u organizaciji Hrvatskoga reumatološkog društva. Slijedi popis stručno-znanstvenih skupova na kojima su liječnici Klinike imali važnu organizacijsko-znanstvenu ulogu.

Značajniji stručni znanstveni skupovi u kojima su članovi klinike imali važnu organizacijsko-znanstvenu ulogu (2000. – 2020.)

- 15. – 17. 10. 2003. 6. godišnji kongres Hrvatskoga reumatološkog društva, Hvar
- 5. 10. 2004. "Prvi hrvatski dan posvećen križbolji", Zagreb, povodom obilježavanja Svjetskog dana kraljevnice
- 18. 10. 2005. Simpozij „Križbolja – biopsihosocijalni aspekt“, Zagreb, povodom obilježavanja Svjetskog dana kraljevnice
- 14. – 16. 10. 2005. 7. godišnji kongres Hrvatskoga reumatološkog društva, Rovinj
- 4. 10. 2006. Simpozij „Dijagnostika i liječenje hernije lumbalnog diska“, Zagreb, povodom obilježavanja Svjetskog dana kraljevnice
- 20. – 22. 10. 2006. 8. godišnji kongres Hrvatskoga reumatološkog društva, Opatija
- 16. 10. 2007. Simpozij „Prognoza i ishod križbolje: medicina temeljena na dokazima“, Zagreb, povodom obilježavanja Svjetskog dana kraljevnice
- 19. – 21. 10. 2007. 9. godišnji kongres Hrvatskoga reumatološkog društva, Split
- 2. 10. 2008. Simpozij „Vratobolja: od uzroka do rehabilitacije“, Zagreb, povodom obilježavanja Svjetskog dana kraljevnice
- 17. – 19. 10. 2008. 10. godišnji kongres Hrvatskoga reumatološkog društva, Primošten
- 5. 3. 2009. „Izvanzglobni reumatizam i srodna stanja – novosti u dijagnostici i liječenju“, poslijediplomski tečaj stalnog medicinskog usavršavanja, Zagreb
- 6. 10. 2009. Simpozij „Torakalna kralježnica – zanemareni dio kralježnice“, Zagreb, povodom obilježavanja Svjetskog dana kraljevnice
- 18. – 21. 11. 2009. 13th Mediterranean Congress of Rheumatology, Cavtat

Day, which is held every year in October, and for the last seven years it has been sponsored by the Croatian Academy of Sciences and Arts. The chairperson of all symposia, except the first one (which was chaired by Prof. Z. Jajić) was Prof. Grazio. The physicians of our Department always had a significant role at these symposia, and they have actively participated in them on a regular basis. At the symposia, very diverse topics from the field of vertebrology were covered. They also included a great number of participants, and the opinion of the professional and academic community was that they were events of a remarkably high quality. In addition to that, the Department was the co-organiser of numerous symposia on the occasion of the World Trauma Day. The employees of the Department were particularly active in organising and conducting numerous lectures, courses, and workshops with the aim of early recognition and appropriate treatment and rehabilitation of patients with inflammatory rheumatic diseases, low back pain, osteoporosis and children with neurodevelopmental disorders. One of the ways in which we have tried to draw more attention to this topic was the "Don't turn your back on low back pain" campaign (in Croatian: *Ne okrećite leđa križbolji*). In 2015, in collaboration with the Croatian League against Rheumatism, the Department celebrated the World Ankylosing Spondylitis Day (on 29 April) for the first time in Croatia. This was the beginning of the aforementioned campaign, which aimed at early recognition and appropriate treatment of patients with this group of inflammatory rheumatic diseases. The campaign was aimed at the general public, patients with chronic low back pain, as well as doctors, primarily family practice doctors. There was also the possibility of scheduling appointments for patients and performing examinations on patients with inflammatory low back pain and suspected axial spondyloarthritis. These examinations were to be carried out by subspecialists in rheumatology, and they were to be scheduled with no connection to the regular waiting list. Since December 2016, the non-profit project "Quantum PsA – Croatia" has been implemented, which is primarily aimed at dermatologists and rheumatologists. The project has been implemented at the Sestre milosrdnice UHC. As part of both projects, a procedure for early and correct referral, recognition, and appropriate treatment of patients with axial spondyloarthritis or psoriatic arthritis was established, with the aim of reducing the degree of disability and improving the quality of life of these patients. In order to raise awareness of the importance of work ability of patients with musculoskeletal diseases and conditions, the National Coalition titled "Fit for Work Croatia" was established as part of the EU project "Fit for Work". This initiative was established for the purpose of raising awareness of the importance of

21. – 22. 11. 2009. 11. godišnji kongres Hrvatskoga reumatološkog društva, Cavtat
19. – 21. 3. 2010. *European interdisciplinary rheumatology conference*, Dubrovnik, Hrvatska
14. – 17. 10. 2010. 12. godišnji kongres Hrvatskoga reumatološkog društva, Zadar
19. 10. 2010. Simpozij „Novosti i perspektive u vertebrologiji“, Zagreb, povodom obilježavanja Svjetskog dana kraljeznice
25. 2. 2011. „Izvanzglobni reumatizam i srodna stanja – novosti u dijagnostici i liječenju“, poslijediplomski tečaj stalnog medicinskog usavršavanja, Zagreb
18. 10. 2011. Simpozij „Smjernice za dijagnostiku, konzervativno i invazivno/operacijsko liječenje križbolje“, Zagreb, povodom obilježavanja Svjetskog dana kraljeznice
20. – 23. 10. 2011. 13. godišnji kongres Hrvatskoga reumatološkog društva, Cavtat
10. – 13. 5. 2012. 5. hrvatski kongres fizikalne i rehabilitacijske medicine s međunarodnim sudjelovanjem, Zagreb
16. 10. 2012. Simpozij „Neuspjeh kirurških postupaka na slabinskoj kralježnici – uzroci i rješenja“, Zagreb, povodom obilježavanja Svjetskog dana kraljeznice
1. 3. 2013. „Izvanzglobni reumatizam i srodna stanja – novosti u dijagnostici i liječenju“, poslijediplomski tečaj stalnoga medicinskog usavršavanja, Zagreb
15. 10. 2013. Simpozij „Medicinske vježbe u križbolji“, Zagreb, povodom obilježavanja Svjetskog dana kraljeznice
17. – 20. 10. 2013. 15. Godišnji kongres Hrvatskoga reumatološkog društva, Split
24. 10. 2013. Simpozij „Prijelomi kuka – sekundarna prevencija osteoporotskih prijeloma“, Zagreb, povodom Svjetskog dana traume
28. – 31. 8. 2014. *XV. Mediterranean Congress of Rheumatology* (MCR), Istanbul, Turska; S. Grazio član Znanstvenoga savjetodavnog odbora (*Scientific Advisory Committee*) i suvoditelj sekcije Spondiloartropatije
16. 10. 2014. Simpozij „Sportske ozljede kraljeznice“, Zagreb, povodom Svjetskog dana kraljeznice
23. – 26. 10. 2014. 16. godišnji kongres Hrvatskoga reumatološkog društva, Šibenik
31. 10. 2014. Simpozij „Prijelomi gornjeg okrajka bedrene kosti“, Zagreb, povodom Svjetskog dana traume
7. – 9. 11. 2014. 17. godišnja Europska konferencija organizacije bolesnika s artritisom i reumatizmom (PARE) Europske lige protiv reumatizma (EULAR), Hotel Esplanade, Zagreb
13. 10. 2015. Simpozij „Atlanto-aksijalna regija – bolesti i ozljede“, Zagreb, povodom Svjetskog dana kraljeznice
15. – 18. 10. 2015. 17. godišnji kongres Hrvatskoga reumatološkog društva Hrvatskoga liječničkog zbora, Poreč

work ability and achieving its long-lasting effect in patients with musculoskeletal diseases and conditions. The employees of our Department (Prof. Simeon Grazio, MD, PhD and Assistant Prof. Frane Grubišić, MD) have actively participated in this initiative, and they have also attended the meeting held at the Croatian Parliament on 13 May 2015, at which this Coalition was established. At the next session of the Coalition, Prof. Grazio was appointed head of the Working Group for Low Back Pain. Moreover, workshops were held on the topic of early detection of children with neurological risk symptoms, as research has shown that the timely inclusion of such children in programmes is beneficial for achieving optimal habilitation results. Furthermore, Prof. Grazio was the co-organiser and one of the lecturers at the courses on writing scientific papers, communication and peer review which were held as part of the annual congress of the Croatian Society for Rheumatology in 2017, 2018 and 2019. These courses were held in collaboration with Prof. Armen Y. Gasparian and Prof. Olena Zimba. In addition to that, Prof. Grazio was the co-organiser and lecturer at the "Writing and Critical Reading of Scientific Papers" course (in Croatian: *Pisanje i kritičko čitanje znanstvenoga rada*), which was held three times in 2018, and which was organised by the Croatian Society for Rheumatology. In the following part, we shall present the list of significant professional and scientific meetings in which the employees of the Department played an important organisational and scientific role.

Significant professional and scientific meetings in which the employees of the Department played an important organisational and scientific role (2000 – 2020)

15 – 17 October 2003 – 6th Annual Congress of the Croatian Society for Rheumatology, Hvar

5 October 2004 – The First Croatian Low Back Pain Day, Zagreb, held on the occasion of the World Spine Day

18 October 2005 – "Low Back Pain – Biopsychosocial Aspect" Symposium, Zagreb, held on the occasion of the World Spine Day

14 – 16 October 2005 – 7th Annual Congress of the Croatian Society for Rheumatology, Rovinj

4 October 2006 – "Diagnosis and Treatment of Lumbar Disc Herniation" Symposium, Zagreb, held on the occasion of the World Spine Day

20 – 22 October 2006 – 8th Annual Congress of the Croatian Society for Rheumatology, Opatija

16 October 2007 – "Prognosis and Outcome of Low Back Pain: Evidence-based Medicine" Symposium, Zagreb, held on the occasion of the World Spine Day

19 – 21 October 2007 – 9th Annual Congress of the Croatian Society for Rheumatology, Split

30. 10. 2015. Simpozij „Liječenje prijeloma proksimalnog humerusa“, Zagreb, povodom Svjetskog dana traume

14. – 17. 4. 2016. 7. hrvatski kongres fizikalne i rehabilitacijske medicine s međunarodnim sudjelovanjem, Šibenik

1. – 4. 9. 2016. 16. mediteranski reumatološki kongres, Sarajevo

13. 10. 2016. Simpozij „Stenoza spinalnog kanala lumbalne regije“, Zagreb, povodom obilježavanja Svjetskog dana kralježnice

20. – 23. 10. 2016. 18. kongres Hrvatskoga reumatološkog društva, Šibenik

21. 10. 2016. Simpozij „Osteoporotski prijelomi – dijagnostika, liječenje i rehabilitacija“, Zagreb, povodom obilježavanja Svjetskog dana traume

22. – 23. 9. 2017. *AGORA meeting* (platforma za organizacije bolesnika s reumatskim i koštano-mišićnim bolestima južne Europe / *platform representing patient organizations of people with Rheumatic and Musculoskeletal Diseases (RMDs) in Southern Europe*), Zagreb, Hrvatska.

17. 10. 2017. Simpozij „Smjernice za dijagnostiku i liječenje bolesnika s vratoboljom“, Zagreb, povodom Svjetskog dana kralježnice

18. 10. 2017. Simpozij „Prijelomi u području ručnog zgloba i šake – dijagnostika, liječenje i rehabilitacija“, Zagreb, povodom Svjetskog dana traume

26. – 29. 10. 2017. 19. godišnji kongres Hrvatskoga reumatološkog društva s međunarodnim sudjelovanjem, Dubrovnik

12. – 14. 4. 2018. *14. Mediterranean Congress of Rheumatology*, Genova, Italija

19. – 22. 4. 2018. 7. hrvatski kongres fizikalne i rehabilitacijske medicine, Šibenik

4. 10. 2018. tečaj I. kategorije Medicinskog fakulteta u Zagrebu „Novosti u liječenju osteoartritisa koljena“, Zagreb

16. 10. 2018. Simpozij „Sakrolijakalni zglobovi“, Zagreb, povodom Svjetskog dana kralježnice

17. 10. 2018. Simpozij „Ozljeđe kralježnice“, Zagreb, povodom Svjetskog dana traume

6. – 8. 12. 2018. Srednjoeuropski reumatološki kongres (*Central European Congress of Rheumatology*), 2018., Zagreb

8. 12. 2018. 20. godišnji kongres Hrvatskoga reumatološkog društva, Zagreb

24. 5. 2019. Simpozij „Od sustavnih preglednih radova do Cochrane kliničkih sažetaka u fizikalnoj i rehabilitacijskoj medicini“, Zagreb

16. 10. 2019. Simpozij „Biološki i medicinski aspekti degenerativnih promjena intervertebralnog diska“, Zagreb, povodom Svjetskog dana kralježnice

2 October 2008 – “Neck pain: causes and rehabilitation” Symposium, Zagreb, held on the occasion of the World Spine Day

17 – 19 October 2008 – 10th Annual Congress of the Croatian Society for Rheumatology, Primošten

5 March 2009 – “Extra-articular Rheumatism and Related Conditions – Novelties in Diagnosis and Treatment”, postgraduate course of continuing medical education, Zagreb

6 October 2009 – “Thoracic Spine – A Neglected Portion of the Spine” Symposium, Zagreb, held on the occasion of the World Spine Day

18 – 21 November 2009 – 13th Mediterranean Congress of Rheumatology, Cavtat

21 – 22 November 2009 – 11th Annual Congress of the Croatian Society for Rheumatology, Cavtat

19 – 21 March 2010 – European Interdisciplinary Rheumatology Conference, Dubrovnik, Croatia

14 – 17 October 2010 – 12th Annual Congress of the Croatian Society for Rheumatology, Zadar

19 October 2010 – “News and Perspectives in Vertebrology”, Zagreb, held on the occasion of the World Spine Day

25 February 2011 – “Extra-articular Rheumatism and Related Conditions – Novelties in Diagnosis and Treatment”, postgraduate course of continuing medical education, Zagreb

18 October 2011 – “Guidelines for the Diagnosis, Conservative and Invasive/Operative Treatment of Low Back Pain” Symposium, Zagreb, held on the occasion of World Spine Day

20 – 23 October 2011 – 13th Annual Congress of the Croatian Society for Rheumatology, Cavtat

10 – 13 May 2012 – 5th Croatian Congress of Physical and Rehabilitation Medicine with international participation, Zagreb

16 October 2012 – “Failure of Surgery on the Lumbar Spine – Causes and Solutions” Symposium, Zagreb, on the occasion of World Spine Day

1 March 2013 – “Extra-articular Rheumatism and Related Conditions – Novelties in Diagnosis and Treatment”, postgraduate course of continuing medical education, Zagreb

15 October 2013 – “Medical Exercises for Low Back Pain” Symposium, Zagreb, held on the occasion of the World Spine Day

17 – 20 October 2013 – 15th Annual Congress of the Croatian Society for Rheumatology, Split

24 October 2013 – “Hip Fractures – Secondary Prevention of Osteoporotic Fractures” Symposium, Zagreb, held on the occasion of the World Trauma Day

28 – 31 August 2014 – XV Mediterranean Congress of Rheumatology (MCR), Istanbul, Turkey, S. Grazio, member of the Scientific Advisory Committee and co-leader of the “Spondyloarthropathies” section

„European Prospective Osteoporosis Study (EPOS)“ – leader and principal investigator for Croatia (voditelj i glavni istraživač za Hrvatsku): prof. dr. sc. Ivo Jajić; financed by European Union Concerted Action Grant pod Biomed-1 (BMH1CT920182) and EU grants C1P-DCT925102 i ERBC1PDCT 930105 i 940229 (financiranje: Komisija za znanost Europske unije i EU grants), supported by the Wellcome Trust (uz potporu Wellcome Trusta); 1996–2002.

„Molecular mechanisms of the effects of immune disorders on bone (Molekularni mehanizmi učinaka imunskih poremećaja na kost)“ – collaborator (suradnik): prof. dr. sc. Zrinka Jajić; financed by (financiranje): Ministry of Science, Education and Sports of the Republic of Croatia (Ministarstvo znanosti, obrazovanja i športa RH); project code (šifra projekta): 108-1080229-0142); 2007-2011.

“Effects of work environmental factors on musculo-skeletal system (Utjecaji čimbenika radnog okoliša na mišićno-koštani sustav)“ – collaborator (suradnik): prof. dr. sc. Simeon Grazio; financed by (financiranje): Ministry of Science, Education and Sports of the Republic of Croatia (Ministarstvo znanosti, obrazovanja i športa RH); project code (šifra projekta): 022.0222411-2409; 2007-2013.

„Psoriatic arthritis – epidemiology and risk factors (Psorijatični artritis – epidemiologija i čimbenici rizika)“ – lead investigator (voditelj): prof. dr. sc. Simeon Grazio; financed by (financiranje): Ministry of Science, Education and Sports of the Republic of Croatia (Ministarstvo znanosti, obrazovanja i športa RH); project code (šifra projekta): 134-0000000-3531); 2008-2011.

„Development and validation of a new patient-reported outcome (PRO) questionnaire to estimate vitamin D status (D-PRO) and its correlation with quality of life, disease activity and disability in rheumatoid arthritis patients in Europe“ – leader and principal investigator for Croatia (voditelj i glavni istraživač za Hrvatsku): prof. dr. sc. Simeon Grazio; financed by (financiranje): European League Against Rheumatism – EULAR (Europska liga protiv reumatizma – EULAR); number (broj): CLI064; 2012–2016.

„A multinational observational study to investigate the impact of treatment recommendation for the treatment of patients with rheumatoid arthritis using web-based monitoring“ – associate (suradnik): prof.

17. – 20. 10. 2019. 21. godišnji kongres Hrvatskoga reumatološkog društva s međunarodnim sudjelovanjem, Šibenik

22. 10. 2019. Simpozij „Revizijski zahvati kod protetike kuka: dijagnostika, liječenje i rehabilitacija“, Zagreb, povodom Svjetskog dana traume

dr. sc. Zrinka Jajić; financed by (financiranje): International Recommendation Implementation Study, Leiden University Medical Center, Merit Foundation, Netherlands; 2012–2014.

„Coxib and traditional NSAID Trialist (CNT) Collaboration“ – collaborator (suradnik): prof. dr. sc. Zrinka Jajić; financed by (financiranje): Medical Research Council and the British Heart Foundation, and coordinated by researchers at the MRC Clinical Trial Service Unit & Epidemiological Studies Unit (CTSU) at the University of Oxford; 2012–2013.

„ASAS Health Indeks – a new tool to measure health in patients with spondyloarthritis based on the International Classification of Functioning, Disability and Health (ICF)“ – leader and principal investigator for Croatia (voditelj i glavni istraživač za Hrvatsku): prof. dr. sc. Simeon Grazio; collaborators (suradnici): doc. dr. sc. Frane Grubišić, dr. Hana Skala Kavanagh; financed by (financiranje): Assessment of Spondyloarthritis International Society (ASAS); 2013–2018.

„Proteomic profiling of blood plasma proteins associated with rheumatoid arthritis, psoriatic arthritis and non-inflammatory arthritis (Proteomsko profiliranje proteina krvne plazme povezanih s reumatoidnim artritisom, psorijatičnim artritisom i ne-upalnim artritisom)“ – collaborator / leader of the research unit (suradnik / voditelj na istraživačkoj jedinici): prof. dr. sc. Simeon Grazio; financed by (financiranje): research project by the Department of Proteomics, Centre for Translational and Clinical Medicine, School of Medicine, University of Zagreb (istraživački projekt Odjela za proteomiku, Centra za translacijsku i kliničku medicinu Medicinskog fakulteta u Zagrebu); 2013–

„EULAR Recommendations for the use and interpretation of laboratory diagnostic tests for the management of systemic autoimmune rheumatic diseases“ – collaborator (suradnik): prof. dr. sc. Simeon Grazio; financed by (financiranje): European League Against Rheumatism – EULAR (Europska liga protiv reumatizma – EULAR); number (broj): SCI016; 2017–2020.

„Determination of differences in the proteomic profile and occurrence of inflammatory mediators in the blood and urine of patients with FOP, and examination of the induction of ossification by egg extract in cell culture of fibrocytic-adipose progenitors (Određivanje razlika u proteomskom profilu te pojavnosti upalnih medijatora u krvi i urinu pacijenata sa FOP te ispiti-

vanje indukcije okoštavanja ekstraktom jaja u staničnoj kulturi fibrocitno-adipoznih progenitora)“ – collaborator (suradnik): prof. dr. sc. Simeon Grazio; financed by (financiranje): project supported by the University of Zagreb (projekt potpore Sveučilišta u Zagrebu); 2018–

„Classification of Axial Spondyloarthritis Inception Cohort“ – leader and principal investigator for Croatia (voditelj i glavni istraživač za Hrvatsku): prof. dr. sc. Simeon Grazio; collaborators (suradnici): doc. dr. sc. Frane Grubišić, dr. Hana Skala Kavanagh, dr. sc. Ines Doko Vajdić; financed by (financiranje): Assessment of Spondyloarthritis International Society (ASAS); 2018–

„Activity of bone progenitor cells in bone metabolism disorders caused by inflammation (Aktivnost koštanih progenitorskih stanica u poremećajima koštanog metabolizma uzrokovanih upalom)“ – collaborator (suradnik): prof. dr. sc. Zrinka Jajić; financed by (financiranje): University of Zagreb (Sveučilište u Zagrebu); 2015–

„Notch signaling pathway in rheumatoid arthritis-induced osteoclast progenitors (Notch signalni put u osteoklastnim progenitorima potaknutim reumatoidnim artritisom)“ – collaborator (suradnik): prof. dr. sc. Zrinka Jajić; financed by (financiranje): Croatian Science Foundation (Hrvatska zaklada za znanost) (IP-2018-01-2414); 2018–

„Analysis of cytokines and proteomic profile of microvesicles in biological fluids of patients with rare bone diseases and bone fractures and hampered bone healing (Analiza citokina i proteomskog profila mikrovezikula u biološkim tekućinama pacijenata s rijetkim koštanim bolestima te kod koštanih prijeloma i otežanog koštanog cijeljenja)“ – collaborator (suradnik): prof. dr. sc. Simeon Grazio; financed by (financiranje): research project by the Department of Proteomics, Centre for Translational and Clinical Medicine, School of Medicine, University of Zagreb (istraživački projekt Odjela za proteomiku, Centra za translacijsku i kliničku medicinu Medicinskog fakulteta u Zagrebu); 2020–

„GRAPPA (Group for Research in Assessment of Psoriasis and Psoriatic Arthritis) recommendation 2021“ – collaborator (suradnik): prof. dr. sc. Simeon Grazio; financed by (financiranje): GRAPPA; 2020–

FIGURE 5. – SLIKA 5. Research projects (2000 – 2020) / Znanstveni projekti (2000. – 2020.)

16 October 2014 – “Sports-related Spine Injuries” Symposium, Zagreb, held on the occasion of the World Spine Day

23 – 26 October 2014 – 16th Annual Congress of the Croatian Society for Rheumatology, Šibenik

25. 10. 2019. tečaj I. kategorije Medicinskog fakulteta u Zagrebu „Novosti u liječenju osteoartritisa koljena“, Zagreb

22. 11. 2019. „MRI training“, Zagreb

27. – 30. 8. 2020. 8. hrvatski kongres fizikalne medicine i rehabilitacije, Šibenik / webinar

31 October 2014 – “Fractures of the Upper Part of the Femur” Symposium, Zagreb, held on the occasion of the World Trauma Day

7 – 9 November 2014 – 17th EULAR Annual European Conference of PARE, Hotel Esplanade, Zagreb

13 October 2015 – “Atlanto-axial Joint – Diseases and Injuries” Symposium, Zagreb, held on the occasion of the World Spine Day

15 – 18 October 2015 – 17th Annual Congress of the Croatian Society for Rheumatology of the Croatian Medical Association, Poreč

30 October 2015 – “Treatment of Proximal Humerus Fracture” Symposium, held on the occasion of the World Trauma Day

14 – 17 April 2016 – 7th Croatian Congress of Physical and Rehabilitation Medicine with international participation, Šibenik

1 – 4 September 2016 – XVI Mediterranean Congress of Rheumatology, Sarajevo

13 October 2016 – “Lumbar Spinal Stenosis” Symposium, Zagreb, held on the occasion of the World Spine Day

20 – 23 October 2016 – 18th Congress of the Croatian Society for Rheumatology, Šibenik

21 October 2016 – “Osteoporotic Fractures – Diagnosis, Treatment and Rehabilitation” Symposium, Zagreb, held on the occasion of the World Trauma Day

22 – 23 September 2017 – The AGORA meeting – a platform representing patient organizations of people with Rheumatic and Musculoskeletal Diseases (RMDs) in Southern Europe, Zagreb, Croatia

17 October 2017 – “Guidelines for the Diagnosis and Treatment of Patients with Neck Pain” Symposium, Zagreb, held on the occasion of the World Spine Day

18 October 2017 – “Wrist and Hand Fractures – Diagnosis, Treatment and Rehabilitation” Symposium, Zagreb, held on the occasion of the World Trauma Day

26 – 29 October 2017 – 19th Annual Congress of the Croatian Society for Rheumatology of the Croatian Medical Association with international participation, Dubrovnik

12 – 14 April 2018 – 14th Mediterranean Congress of Rheumatology, Genoa, Italy

19 – 22 April 2018 – 7th Croatian Congress of Physical and Rehabilitation Medicine, Šibenik

4 October 2018 – 1st category course of the School of Medicine, University of Zagreb: “New Procedures in the Treatment of Osteoarthritis of the Knee”, Zagreb

16 October 2018 – “Sacroiliac Joints” Symposium, Zagreb, held on the occasion of the World Spine Day

17 October 2018 – “Spine Injuries” Symposium, Zagreb, held on the occasion of the World Trauma Day

6 – 8 December 2018 – Central European Congress of Rheumatology, 2018, Zagreb

8 December 2018 – 20th Annual Congress of the Croatian Society for Rheumatology, Zagreb

13. 10. 2020. Simpozij „Osteoporoza kralježnice“, Zagreb (*webinar*), povodom Svjetskog dana kralježnice

16. – 17. 10. 2020. 22. godišnji kongres Hrvatskoga reumatološkog društva s međunarodnim sudjelovanjem – virtualni kongres

Klinika je niz desetljeća bila jedna od vodećih u znanstvenoj aktivnosti u svojim područjima djelovanja, a posljednjih desetljeća to je još osnaženo, napose većim udjelom u bazičnim istraživanjima, dok je broj djelatnika koji se bave znanstvenim radom značajno proširen. Iako su područja znanstvenog istraživanja dominantno klinička, iz područja reumatologije te fizikalne medicine i rehabilitacije (u odraslih i u djece), u zadnjih desetak godina primjetan je porast broja bazičnih istraživanja, napose iz područja patofizioloških procesa upalnih reumatskih bolesti i biologije bolesti karakteriziranih poremećajima osifikacije. Velika većina liječnika stekla je titulu primarijusa u zadnjih 15 godina, kao i sedam od deset liječnika doktorat znanosti, uz jedan magisterij (većini je mentor/voditelj bio prof. Grazio), što govori u prilog poticajnog i pozitivnog ozračja za stručni i znanstveni razvoj na Klinici.

U Klinici je provođeno više projekata i neprofitnih istraživanja te kliničkih studija. Posebno je vrijedno istaknuti projekte financirane od strane Ministarstva znanosti, obrazovanja i sporta RH i Hrvatske zaklade za znanost, kao i i činjenicu da su neki od projekata i istraživanja u zadnjih petnaestak godina realizirani u suradnji s uglednim domaćim i međunarodnim ustanovama i organizacijama. To su na primjer Centar za translacijska i klinička istraživanja – Odjel za proteomiku, Zavod za fiziologiju i imunologiju i Hrvatski institut za istraživanje mozga Medicinskog fakulteta u Zagrebu, Institut za medicinska istraživanja i medicinu rada Republike Hrvatske u Zagrebu, Institut „Ruđer Bošković“ u Zagrebu ili *Assessment of SpondyloArthritis International Society*. Od 2019. klinika je kao nacionalni centar uključena u mrežu europskih referentnih centara (ERN – *European Reference Network*) iz područja rijetkih imunodeficijencija, autoinflamatornih i autoimunih bolesti RITA (*Rare Immunodeficiency Autoinflammatory Autoimmune*), s ciljem omogućavanja zdravstvenim profesionalcima i bolesnicima u Europskoj uniji pristup najboljoj ekspertizi i pravovremenoj razmjeni znanja. Na slici 5. dan je popis projekata u razdoblju od 2000. do 2020. godine.

Djelatnici Klinike sudjelovali su u više multicentričnih intervencijskih studija, čime su stečene nove spoznaje i iskustva o novim mogućnostima liječenja, poglavito upalnih i neupalnih reumatskih bolesti, osteoporoze i traumatologije.

Znanstvena se aktivnost odražava i u broju aktivnih sudjelovanja na znanstvenim skupovima i objavljenih publikacija, u čemu Klinika ima zavidnu tradiciju. Dje-

24 May 2019 – “From Systematic Reviews to Cochrane Clinical Abstracts in Physical and Rehabilitation Medicine” Symposium, Zagreb

16 October 2019 – “Biological and Medical Aspects of Intervertebral Disc Degenerative Changes” Symposium, Zagreb, on the occasion of the World Spine Day

17 – 20 October 2019 – 21st Annual Congress of the Croatian Society for Rheumatology with international participation, Šibenik

22 October 2019 – “Revision Procedures in Hip Prosthetics: Diagnosis, Treatment and Rehabilitation” Symposium, Zagreb, held on the occasion of the World Trauma Day

25 October 2019 – 1st category course of the School of Medicine, University of Zagreb: “New Procedures in the Treatment of Osteoarthritis of the Knee”, Zagreb

22 November 2019 – MRI training, Zagreb

27 – 30 August 2020 – 8th Croatian Congress of Physical and Rehabilitation Medicine, Šibenik (webinar)

13 October 2020 – “Osteoporosis of the Spine” Symposium, Zagreb (webinar), held on the occasion of the World Spine Day

16 – 17 October 2020 – 22nd Annual Congress of the Croatian Society for Rheumatology of the Croatian Medical Association with international participation (virtual congress)

For several decades, the Department has been one of the leaders in scientific activity in its fields, and in recent decades this has been further strengthened, especially with a larger share of operations in basic research, while the number of employees who engage in scientific work increased significantly. Although the areas of scientific research are predominantly focused on the clinical field, in the last decade there has been a noticeable increase in the number of basic research studies in the field of Rheumatology and Physical Medicine and Rehabilitation (in adults and in children), and especially in the field of Pathophysiology of Inflammatory Rheumatic Diseases and the biology of diseases characterised by ossification disorders. In the period of the last 15 years, most of our physicians obtained the title of primarius (Prim.), seven of our ten physicians obtained a title of PhD and one of them got a Master's degree (most of them were mentored by Prof. Grazio), which speaks in favour of a stimulating and positive atmosphere for the professional and scientific development at the Department.

Several projects and non-profit research and clinical studies were conducted at the Department. It is important to highlight the projects funded by the Ministry of Science, Education and Sports of the Republic of Croatia and the Croatian Science Foundation, as well as the fact that some of the projects and research studies conducted in the last fifteen years have been carried out in cooperation with reputable national and international

latnici Klinike su autori, koautori i urednici više knjiga ili poglavlja u knjigama, a mnoge od njih su nastavni i/ili sveučilišni udžbenici/tekstovi. Djelatnici Klinike pojavljuju se oko 400 puta kao autori ili koautori stručno-znanstvenih radova *in extenso*, od čega više od 150 puta u časopisima koji se citiraju u najprestižnijim bazama podataka, a s oko 600 radova sudjelovali su na domaćim i međunarodnim skupovima (objavljeni sažetci), što sve govori o značajnoj stručno-znanstvenoj i publicističkoj aktivnosti djelatnika klinike, najvećim dijelom u zadnjih petnaestak godina. Kao primjer interesa stručne javnosti za visokokvalitetne radove proistekle iz rada djelatnika klinike vrijedno je spomenuti rad o perzistenciji tjeđnog alendroanata (Grazio i sur., 2008.), koji je u tjeđnu objavljivanja bio drugi najčitaniji rad u tjeđnu objave uopće. Na slici 6. dan je popis poglavlja u knjigama, a na slici 7. izbor značajnijih radova (*in extenso*).

Liječnici klinike članovi su više domaćih i međunarodnih stručnih udruga i organizacija kao što su Hrvatsko reumatološko društvo, Hrvatsko društvo za fizikalnu i rehabilitacijsku medicinu, Hrvatsko vertebralno društvo, Hrvatsko društvo za liječenje boli, Hrvatsko društvo za palijativnu medicinu, Hrvatsko društvo za sportsku medicinu, Hrvatsko društvo za neuromuskularne bolesti i kliničku elektromiografiju, Hrvatsko društvo za reanimatologiju, Hrvatsko logopedsko društvo, Hrvatsko udruženje za bihevioralno-kognitivne terapije, Hrvatski olimpijski odbor, kao i nekoliko međunarodnih udruga i organizacija, kao što su Britansko reumatološko društvo, Europska liga protiv reumatizma (*European League Against Rheumatism* – EULAR), Europsko društvo za fizikalnu i rehabilitacijsku medicinu (*European Society for Physical and Rehabilitation Medicine* – ESPRM), Međunarodna zaklada za osteoporozu (*International Osteoporosis Foundation*), Međunarodno društvo za ortotiku i protetiku (*International Society for Prosthetic and Orthotic* – ISPO), međunarodna grupa ASAS (*Assessment of Spondyloarthritis*), međunarodna grupa GRAPPA (*Group for Research and Assessment of Psoriasis and Psoriatic Arthritis*). Fizioterapeuti i medicinske sestre članovi su svojih stručnih udruga.

Neki od zaposlenika obavljali su i obavljaju dužnosti u stručnim društvima i organizacijama, domaćim i međunarodnim. Tako je, na primjer, prof. Grazio predsjednik Hrvatskoga vertebralnog društva HLZ-a (od 2013.), prvi je dopredsjednik Hrvatskog društva za fizikalnu i rehabilitacijsku medicinu HLZ-a (od 2013.) i prvi dopredsjednik Hrvatskoga reumatološkog društva HLZ-a (od 2015.); doc. Grubišić član je Upravnog odbora Hrvatskog društva za fizikalnu i rehabilitacijsku medicinu i Hrvatskoga vertebralnog društva (aktualno je i tajnik potonjeg stručnoga društva), a bio je član Upravnog odbora Hrvatskoga reumatološkoga

institutions and organisations. These include: the Centre for Translational and Clinical Research – the Department of Proteomics, the Department of Physiology and Immunology and the Croatian Institute for Brain Research of the School of Medicine, University of Zagreb, Institute for Medical Research and Occupational Health of the Republic of Croatia in Zagreb, the Ruđer Bošković Institute in Zagreb, or the Assessment of SpondyloArthritis international Society. Since 2019, the Department has been included in the European Reference Network (ERN) as a national centre in the field of Rare Immunodeficiency, Autoinflammatory and Autoimmune Diseases (RITA), with the aim of enabling health professionals and patients in the European Union to get the best expert advice and the timely exchange of knowledge. Figure 5. present a list of significant research projects conducted in the period from 2000 to 2020.

The employees of the Department participated in several multicentre intervention studies, which helped them gain new knowledge and experience about the new treatment options, especially in the area of inflammatory and non-inflammatory rheumatic diseases, osteoporosis, and traumatology.

Scientific activity is also reflected in the number of active participations in scientific meetings and published publications, and the Department has a long tradition of partaking in both of these areas. The employees of the Department are authors, co-authors and editors of several books or book chapters, many of which are educational textbooks and/or university textbooks/articles. Furthermore, employees of the Department are mentioned approximately 400 times as authors or co-authors of scientific papers in extenso. In that total number of honourable mentions, they appear over 150 times in journals that are cited in the most prestigious databases. Moreover, with approximately 600 papers, they participated in national and international meetings (published abstracts). which speaks volumes about the significant scientific and publishing activity of the Department's employees, mostly over the last fifteen years. As an example of the academic community's interest in high-quality papers resulting from the work of the Department's employees, it is worth mentioning the paper on the persistence of weekly alendronate (Grazio et al., 2008), which was the second most read paper in the week of its publication. Figure 6. present the list of book chapters and figure 7. present significant papers (in extenso).

The Department's physicians are members of several national and international professional associations and organisations such as the Croatian Society for Rheumatology, the Croatian Society of Physical and Rehabilitation Medicine, the Croatian Society for Vertebrology, the Croatian Society for the Treatment of

Grazio S. Thermal therapy (Toplinska terapija). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 185–209.

Grazio S. Light therapy (Svjetlosna terapija). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska knjiga; 2000, pp. 210–26.

Grazio S. Heliotherapy (Helioterapija). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 227–30.

Grazio S. Intermittent pneumatic compression (Intermitentna pneumatska kompresija). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 277–80.

Jajić I. History (Povijest). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 1–5.

Jajić I. Short-wave and microwave diathermy (Kratkovalna i mikrovalna dijatermija). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 43–71.

Jajić I. Therapeutic ultrasound (Terapijski ultrazvuk). In: Jajić I et al, editors. Physical Medicine and general rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 72–92.

Jajić I. Diagnostic ultrasound (Dijagnostički ultrazvuk). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 93–112.

Jajić I. Ultrasonophoresis (Ultrasonoforeza). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 113–5.

Jajić I. Pain (Bol). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 123–38.

Jajić I. Transcutaneous electrical nerve stimulation (Transkutana električna živčana stimulacija). In: Jajić

I et al, editors. Physical medicine and general rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 139–53.

Jajić I. Balneotherapy (Balneoterapija). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 296–301.

Jajić I. Zdravstveni turizam (Zdravstveni turizam). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 302–4.

Jajić I. Physical therapy at home (Fizikalna terapija u kući). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 309–10.

Jajić I. Electrical injuries (Električne ozljede). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 404–5.

Jajić I, Grazio S. Basics of kinesitherapy (Osnove kinetoterapije). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 244–55.

Jajić Z. Electrotherapy (Elektroterapija). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 6.

Jajić Z. Galvanization (Galvanizacija). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 7–14.

Jajić Z. Intermittent galvanization (Isprekidana galvanizacija). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 15.

Jajić Z. Iontophoresis (Iontoforeza). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 16–22.

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Jajić Z. Diadynamic currents (Dijadinamičke struje). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 25–30.

Jajić Z. Interference currents (Interferentne struje). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 35–42.

Jajić Z. Traction (Trakcija). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 256–65.

Jajić Z. Thalassotherapy (Talasoterapija). In: Jajić I et al, editors. Physical Medicine and General Rehabilitation (Fizikalna medicina i opća rehabilitacija). 2nd ed. Zagreb: Medicinska naklada; 2000, pp. 307–8.

Grazio S. Musculoskeletal manifestations of acromegaly (Mišićno-koštane manifestacije akromegalije). In: Vrkljan M, Čerina V, editors. Acromegaly – excess and lack of growth hormone (Akromegalija – suvišak i nedostatak hormona rasta). Zagreb: Birotisak d.o.o.; 2004, pp. 281–90.

Nikolić T, Ćurković B. The role of physical medicine and rehabilitation in the treatment of surgical patients (Uloga fizikalne medicine i rehabilitacije u liječenju kirurških bolesnika). In: Hančević J et al, editors. ABC of everyday surgery (ABC kirurške svakidašnjice). Zagreb: Medicinska naklada; 2005, pp. 251–91.

Nikolić V, Nikolić T. Biomechanics (Biomehanika). In: Duraković Z et al, editors. Geriatrics, Medicine of the elderly (Gerijatrija, medicina starije dobi). Zagreb: C.T. – Poslovne informacije; 2007, pp. 473–86.

Grazio S. Palindromic rheumatism (Palindromski reumatizam). In: Vrhovac B, Jakšić B, Reiner Ž, Vučelić B, editors. Internal Medicine (Interna medicina). 4th ed. Zagreb: Naklada Ljevak; 2008, pp. 14–22.

Grubišić F. High voltage electrotherapy (Visokovoltazna elektroterapija). In: Jajić I, Jajić Z et al, editors. Physical and Rehabilitation Medicine (Fizikalna i rehabilitacijska medicina: osnove i liječenje). Zagreb: Medicinska naklada; 2008, pp. 172–4.

Grubišić F. Electrostimulation therapy (Elektrostimulacijska terapija). In: Jajić I, Jajić Z et al, editors. Physical and Rehabilitation Medicine: Basics and Treatment (Fizikalna i rehabilitacijska medicina: os-

FIGURE 6. Significant books and book chapters (2000 – 2020)
SLIKA 6. Značajnije knjige – poglavlja (2000. – 2020.)

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FIGURE 6. Nastavak
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Pain, the Croatian Society for Palliative Medicine, the Croatian Sports Medicine Society, the Croatian Society for Neuromuscular Diseases and Clinical Electromyoneurography, Croatian Resuscitation Council, Croatian Logopedics Association, Croatian Association for Behavioral-Cognitive Therapies, Croatian Olympic Committee, as well as several international associations and organisations, such as the British Society for Rheumatology, the European League against Rheumatism (EULAR), European Society for Physical and Rehabilitation Medicine (ESPRM), International Osteoporosis Foundation (IOF), International Society for Prosthetics and Orthotics, (ISPO), the Assessment of SpondyloArthritis international Society (ASAS), and the Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA). Physiotherapists and nurses are members of their official professional associations.

Some of the employees of the Department have carried out and continue to carry out their duties in professional societies and organisations, both national and international. So, for example, Prof. Grazio is the president of the Croatian Society for Vertebrology of the Croatian Medical Association (he was appointed in 2013), he is the first vice-president of the Croatian Society of Physical and Rehabilitation Medicine of the Croatian Medical Association (he was appointed in 2013 as well), and the first vice-president of the Croatian Society for Rheumatology of the Croatian Medical Association (he was appointed in 2014. In addition to that, Assistant Prof. Grubišić is a member of the Management Board of the Croatian Society of Physical and Rehabilitation Medicine and the Croatian Society for Vertebrology (he is currently the secretary of the aforementioned professional society), and he was a member of the Management Board of the Croatian Society for Rheumatology. Furthermore, Prof. Matijević is a member of the Management Board and the head of the Section for the Rehabilitation of Children of the Croatian Society of Physical and Rehabilitation Medicine, Prim. Nemčić is a member of the Management Board of the Croatian Society for Vertebrology, and Prim. Tatjana Nikolić was a member of the Management Board of the Croatian Society of Physical and Rehabilitation Medicine and a member of the Management Board of the Croatian Society for Vertebrology (she is currently the treasurer of the aforementioned professional society). In addition to that, from 2008 to 2011, Prof. Grazio was a representative of the Croatian Society for Rheumatology at the EULAR Standing Committee on Investigative Rheumatology (ESCIR), and from 2011 to 2015 he was a member of the EULAR Standing Committee on Epidemiology and Health Services. Furthermore, as of 2014, Assistant Prof. Grubišić has been the national delegate of the Croatian Society of

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FIGURE 7. Nastavak
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FIGURE 7. Nastavak
SLIKA 7. Continued

Physical and Rehabilitation Medicine of the CMA at the European Society of Physical and Rehabilitation Medicine (ESPRM), in which he is the chairman of the Special Interest Scientific Committee (SISC) in implementing evidence-based medicine (EBM) in everyday practice, as well as one of the initiators and advocates for the Cochrane Rehabilitation Field. The employees of the Department have received numerous awards, diplomas and certificates of appreciation from professional societies, institutions and non-profit organisations. In 2020, Prof. Grazio was granted the title of honorary member by the European Society of Physical and Rehabilitation Medicine (ESPRM) and he is one of the first members who have obtained this honourable title.

In accordance with the activities of the national and international associations and organisations, it is important to mention some of the activities that our employees have significantly contributed to over the last twenty years. For example, Prof. Grazio is the coordinator of the proposal for subspecialties in physical and rehabilitation medicine (which is one of the activities of the Croatian Society of Physical and Rehabilitation Medicine of CMA), the coordinator and head of the Working Group for the language adaptation and translation of ICF (a clinical tool for rehabilitation medicine) to Croatian (members of the Working Group: Associate Prof. Grubišić and Ana Šečić, educational rehabilitator). Furthermore, Prof. Matijević is the main initiator of the National Register of Children with Neurodevelopmental Risk Factors (one of the activities of the Croatian Society of Physical and Rehabilitation Medicine), and Assistant Prof. Grubišić is the head of the Cochrane Physical and Rehabilitation Medicine Field (one of the activities as part of the collaboration with the Croatian Society for Physical and Rehabilitation Medicine of the CMA).

The employees of the Department have also had an important role in the creation of guidelines/recommendations for the most important entities in the rheumatology and physiatry practice. Some of the guidelines that especially stand out are the following: the 2010 Guidelines of the Croatian Medical Association for the Treatment of Knee and Hip Osteoarthritis (the first author of these Guidelines: Prof. Grazio), the 2017 Recommendation Proposal of the Croatian Society for Rheumatology of the CMA for the Treatment of Adults with Axial Spondyloarthritis and Psoriatic Arthritis with Biologic Drugs and Targeted Synthetic Drugs (the first author of this Recommendation Proposal: Prof. Grazio, the co-author: Assistant Prof. Grubišić), the 2017 Recommendation Proposal of the Croatian Society for Rheumatology of the CMA for the Treatment of Patients with Rheumatoid Arthritis with Biologic Drugs and Targeted Synthetic Drugs (the co-

društva; prof. Matijević je članica Upravnoga odbora i voditeljica je Sekcije za rehabilitaciju djece Hrvatskoga društva za fizikalnu i rehabilitacijsku medicinu; prim. Nemčić član je Upravnoga odbora Hrvatskoga vertebraloškoga društva, prim. Tatjana Nikolić bila je članica Upravnog odbora Hrvatskog društva za fizikalnu i rehabilitacijsku medicinu i članica je Upravnoga odbora Hrvatskoga vertebraloškoga društva (aktualno i blagajnica potonjeg stručnoga društva). Također, prof. Grazio je od 2008. do 2011. bio predstavnik Hrvatskoga reumatološkog društva u Europskome znanstvenom odboru istraživanja u reumatologiji (EULAR *Scientific Committee on Investigative Rheumatology – ESCIR*) Europskoga reumatološkog društva (EULAR), od 2011. do 2015. bio je član Stalnog odbora za epidemiologiju i istraživanje zdravstvenih servisa (*The Standing Committee of Epidemiology and Health Services Research*) EULAR-a, dok je F. Grubišić od 2014. nacionalni delegat Hrvatskog društva za fizikalnu i rehabilitacijsku medicinu HLZ-a pri Europskom društvu za fizikalnu i rehabilitacijsku medicinu (engl. *European Society of Physical and Rehabilitation Medicine*, skr. *ESPRM*) unutar kojega vodi Znanstveni odbor za implementaciju medicine temeljene na dokazima u kliničkoj praksi (engl. *Special Interest Scientific Committee in implementing evidence based medicine in everyday practice*) te je jedan od inicijatora i promotora *Cochrane Rehabilitation*. Djelatnici Klinike dobitnici su povelja, diploma i zahvalnica stručnih društava, institucija i neprofitnih udruga, dok je prof. Graziju 2020. godine dodijeljeno začasno članstvo Europskoga društva za fizikalnu i rehabilitacijsku medicinu (engl. skr. *ESPRM*) kao jednome od prvih članova koji su dobili tu počast.

U skladu s aktivnostima u sklopu domaćih i međunarodnih udruga i organizacija vrijedno je spomenuti neke od njih, kojima su u zadnjih dvadesetak godina značajno pridonijeli djelatnici klinike. Na primjer, prof. Grazio je koordinator prijedloga užih specijalizacija iz fizikalne medicine i rehabilitacije (u sklopu aktivnosti Hrvatskoga društva za fizikalnu i rehabilitacijsku medicinu HLZ-a), koordinator i voditelj radne grupe za prijevod i jezičnu adaptaciju ICF-a – kliničkog alata za rehabilitacijsku medicinu na hrvatski jezik (članovi radne skupine: doc. Grubišić i Ana Šečić – rehabilitator). Prof. Matijević je glavni inicijator Nacionalnog registra neurorizične djece (u sklopu aktivnosti Hrvatskoga društva za fizikalnu i rehabilitacijsku medicinu), a doc. Grubišić je voditelj Cochrane grupe za područje rehabilitacijske medicine (u sklopu aktivnosti suradnje s Hrvatskim društvom za fizikalnu i rehabilitacijsku medicinu HLZ-a).

Djelatnici klinike imali su i važnu ulogu u kreiranju smjernica/preporuka za najvažnije entitete iz reumatološke i fizijatrijske prakse. Među njima posebno se ističu one za liječenje osteoartritis kuka i koljena Hrvat-

authors of this Recommendation Proposal: Prof. Grazio and Assistant Prof. Grubišić), the 2012 guidelines titled "Diagnosis and Treatment of Low Back Pain: review and guidelines of the Croatian Vertebrologic Society of the CMA" (the first author of these Guidelines: Prof. Grazio, co-authors: Prim. Nemčić and Assistant Prof. Grubišić), the 2015 Guidelines of the Croatian Society for Physical and Rehabilitation Medicine of the CMA for the Treatment of Patients with Osteoarthritis of the Hip and/or Knee (the first author of these Guidelines: Prof. Grazio), Guidelines of the Croatian Society for Vertebrology of the CMA for the Diagnosis and Treatment of Patients with Neck Pain (the first author of these Guidelines: Prof. Grazio, co-authors: Assistant Prof. Grubišić, Prim. Nemčić, Prim. Nikolić, Dubravka Sajković, MD, H. Skala Kavanagh, MD), and the Guidelines (Re)habilitation of Children with Neurodevelopmental Disorders (the first author: Prof. Valentina Matijević, co-author: Jelena Marunica Karšaj, MD). When it comes to international guidelines/recommendations it is important to note Prof. Grazio's involvement in the recently published 2021 guidelines of the Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA) and in the validation of the Assessment of SpondyloArthritis international Society (ASAS) health index (along with his collaborators: Assistant Prof. Grubišić and Hana Skala Kavanagh, MD).

The employees of the Department have always been active in the process of editing scientific journals. The Department is the seat, that is, the place of origin of two peer-reviewed journals – the *Rheumatism* journal and the *Physical and Rehabilitation Medicine* journal. *Rheumatism*, the journal of the Croatian Society for Rheumatology of the Croatian Medical Association (CMA), is one of our longest-running journals (it has been published continuously since 1954) and it is the sixteenth journal on the list of the world's top rheumatology journals. Up until 2017, it was indexed in PubMed, but with the reform of that database it was omitted from the list. However, the process of its re-indexing is currently underway. The employees of our Department were also members of the Editorial Board of the *Rheumatism* journal, and, in 2014 Prof. Grazio took on the role of its editor-in-chief, thus succeeding Prof. I. Jajić, who had previously carried out this duty. The Department is also the seat, i.e., the place of origin of the *Physical and Rehabilitation Medicine* journal of the Croatian Society of Physical and Rehabilitation Medicine. In its beginnings, this journal was intended for physiotherapists, and at a later time, physicians became its target audience. Since 2011, this journal has been indexed in the Croatian e-journal databases *Hrčak* and *Index Copernicus*. All of the editors-in-chief of this journal (except for one) were employees of our

skoga reumatološkoga društva HLZ-a iz 2010. (prvi autor: prof. Grazio), za liječenje bolesnika s aksijalnim spondiloartritisom i psorijatičnim artritisom biološkim lijekovima i ciljanim sintetskim molekulama iz 2017. Hrvatskoga reumatološkoga društva HLZ-a (prvi autor: prof. Grazio; koautor: doc. Grubišić), za liječenje bolesnika s reumatoidnim artritisom biološkim lijekovima i ciljanim sintetskim molekulama iz 2017. Hrvatskoga reumatološkoga društva HLZ-a (koautori: prof. Grazio i doc. Grubišić), za dijagnostiku i liječenje bolesnika s križoboljom Hrvatskoga vertebralnog društva HLZ-a iz 2012. (prvi autor: prof. Grazio; koautori: prim. Nemčić i doc. Grubišić), za liječenje osteoartrisa kuka i/ili koljena Hrvatskoga društva za fizikalnu i rehabilitacijsku medicinu HLZ-a iz 2015. (prvi autor: prof. Grazio), za dijagnostiku i liječenje vratobolje Hrvatskoga vertebralnog društva HLZ-a (prvi autor: prof. Grazio; koautori: doc. Grubišić, prim. Nemčić, prim. Nikolić, dr. Sajković, dr. H. Skala Kavanagh) i za (re)habilitaciju djece s neurorazvojnim poremećajima (prvi autor: prof. Matijević, koautor: dr. Marunica Karšaj). Među međunarodnim smjernicama/preporukama vrijedno je spomenuti sudjelovanje prof. Grazija u recentnim smjernicama *Group for Research and Assessment of Psoriasis and Psoriatic Arthritis* (engl. skr. GRAPPA) 2021. i validaciji Indeksa zdravlja međunarodne organizacije eksperata *Assessment of SpondyloArthritis International Society* (engl. skr. ASAS) (suradnici: doc. Grubišić i dr. Skala Kavanagh).

Djelatnici klinike uvijek su bili aktivni u uređivanju stručno-znanstvenih časopisa. Na Klinici je sjedište dvaju časopisa – *Reumatizam* i *Fizikalna i rehabilitacijska medicina*. *Reumatizam*, časopis Hrvatskoga reumatološkog društva Hrvatskoga liječničkog zbora, jedan je od naših najdugovječnijih časopisa (izlazi u kontinuitetu od 1954.) i šesnaesti je po redu među reumatološkim svjetskim časopisima; do 2017. bio je indeksiran u *PubMedu*, a reformom te baze je izostavljen te je u tijeku njegovo ponovno indeksiranje. Djelatnici naše Klinike bili su uključeni u uređivački odbor časopisa *Reumatizam*, a uz prof. I. Jajića, koji je bio i njegov glavni i odgovorni urednik, od 2014. glavni i odgovorni urednik je prof. Grazio. Na Klinici je i sjedište časopisa Hrvatskog društva za fizikalnu i rehabilitacijsku medicinu pri HLZ-u *Fizikalna medicina i rehabilitacija*, koji je u svojim počecima bio namijenjen fizioterapeutima, a kasnije je namijenjen liječnicima. Časopis je od 2011. indeksiran u hrvatskoj bazi časopisa *Hrčak* i *Index Copernicus*. Glavni i odgovorni urednici časopisa, uz jedan izuzetak, bili su djelatnici Klinike: prof. I. Jajić (1984. – 1998.; ujedno i pokretač časopisa), prim. T. Nemčić (2005. – 2008.), prof. S. Grazio (2009. – 2012.), a od 2013. glavni i odgovorni urednik je doc. F. Grubišić. Prof. Grazio je od 2005. do 2015. bio član Uredničkog odbora časopisa *Acta Clinica Croatica* (indeksiran u SCIE), a od druge polovine 2015.

Department: Prof. I. Jajić (1984 – 1998, who was also the founder of this journal), Prim. T. Nemčić (2005 – 2008), Prof. S. Grazio (2009 – 2012), and Assistant Prof. F. Grubišić (2013 – present). Furthermore, from 2005 to 2015, Prof. Grazio was the member of the Editorial Board of the *Acta Clinica Croatica* journal (indexed in the SCIE (Science Citation Index Expanded) journal database), and since the second half of 2015 to the present day he has been the member of the Editorial Council of the journal. Moreover, from 2016 to 2020 he was the member of the Editorial Board of the *European Journal of Physical and Rehabilitation Medicine* (indexed in the Current Contents (CC) database), from 2016 to the present day he has been the member of the Editorial Board of the *Mediterranean Journal of Rheumatology* (indexed in the Scopus database), and from 2018 to the present day he has been the member of the Editorial Board of the *Rheumatology International* journal (indexed in the Current Contents (CC) database). The employees of the Department have reviewed several papers for national and international medical journals. From 2011 to July 2019, Prof. Grazio was the president of the Library Committee of the Sestre milosrdnice UHC, and from July 2019 to the present day he has been a member of the Expert Council of the Sestre milosrdnice UHC Library.

It is important to mention the chief physiotherapists of the Department who played an important role in this segment of the Department's activities with their expertise and organisation of work. They are (mentioned in order, from the establishment of the Department to the present day): Marta (surname unknown), Marija Barbić, Vera Došen, Mateja Znika and Ivan Anzulović (he has been working at the Department from 2011).

In the last fifteen years, the working conditions of the Department have been improved, primarily in the aspect of the level of comfort of hospitalised patients. Moreover, architectural, that is, physical barriers have been overcome, and the area of the Outpatient Clinic for Adults has been expanded and renovated (it was given an annex on the first floor of building number 7). Unfortunately, some of our worksites were extremely damaged in the 2020 earthquakes, so they need to be restored. The IT equipment and support at the Department have been significantly improved in accordance with modern trends, and especially in the last fifteen years, and recently, at the instigation of the head of the Department, tablet computers were purchased for the purpose of facilitating the everyday work duties of physicians and other health professionals.

Following the establishment of the Sestre milosrdnice University Hospital Centre in 2010, the University Department got several associated departments in the form of the following units: the Department of Phys-

nadalje je član Uredničkog savjeta časopisa), 2016. – 2020. časopisa *European Journal of Physical and Rehabilitation Medicine* (indeksiran u CC-u), od 2016. nadalje i *Mediterranean Journal of Rheumatology* (indeksiran u Scopusu), a od 2018. član je Uredničkog odbora časopisa *Rheumatology International* (indeksiran u CC-u). Djelatnici klinike recenzirali su više radova za domaće i međunarodne medicinske časopise. Prof. Grazio je od 2011. do srpnja 2019. bio predsjednik Knjižničkog odbora KBC-a Sestre milosrdnice, a od srpnja 2019. nadalje član je Stručnog vijeća Knjižnice KBC-a Sestre milosrdnice.

Vrijedno je navesti glavne fizioterapeute Klinike, koji su svojom stručnošću i organizacijom rada imali važnu ulogu u tom segmentu djelatnosti. To su od početka Klinike do danas redom: Marta (prezime nepoznato), Marija Barbić, Vera Došen, Mateja Znika i Ivan Anzulović (potonji od 2011. do danas).

U posljednjih petnaestak godina poboljšani su prostorni uvjeti Klinike, a ponajprije komfor hospitaliziranih bolesnika, savladane su arhitektonske zapreke, proširen je i uređen prostor Poliklinike za odrasle bolesnike (na I. katu zgrade broj 7). Nažalost, potresi iz 2020. značajno su oštetili neka od naših radilišta pa je potrebna njihova sanacija. Shodno suvremenim trendovima, a napose u zadnjih petnaestak godina informatička oprema i podrška na klinici značajno su poboljšane, a nedavno su na poticaj predstojnika nabavljena i tablet-računala za lakši svakodnevni rad liječnika i ostalih stručnih djelatnika.

Nakon formiranja Kliničkoga bolničkog centra Sestre milosrdnice (2010.) Klinici su pridružene fizijatrijske službe Klinike za traumatologiju (Draškovićeva 19) i Klinike za tumore (Ilica 197), što je potvrđeno sistematizacijom 2011., kada su u sklopu Zavoda za reumatologiju, fizikalnu medicinu i rehabilitaciju u Klinici tadašnji odsjeci postali zasebni odjeli (odrasli i djeca). U nastavku ukratko slijedi povijesni razvoj i doprinos tih pridruženih dijelova Klinike.

Provođenje fizikalne medicine i rehabilitacije u Bolnici, Kliničkoj bolnici, a naposljetku Klinici za traumatologiju počelo je 1951. u ranim godinama rada Bolnice, u sklopu rehabilitacije ozljeđenika. Odjel za fizikalnu medicinu i rehabilitaciju osnovan je 1964. godine, kada je dogradnjom i preuređenjem starog dijela Bolnice dobio i svoje prostore u podrumu zgrade, gdje je smješten i danas. Od tog vremena raspolaže uređajima za elektroterapiju i dvoranom za kineziterapiju. Vrijedno je napomenuti da je u sklopu fizikalne medicine i rehabilitacije bila napose razvijena radna terapija. Voditelji Službe, a poslije Odjela bili su redom prim. dr. Branko Haramustek, dr. Marijan Hlavka, dr. Vladimir Vinceković, prim. dr. Ružica Nikolić, prim. dr. Dušanka Kostenarović Živković (od 1984. do 2004.), dr. Nina Bival Fak (od 2004. do 2012.), a od 2012. prim. dr. Ta-

iatry of the University Hospital for Traumatology (Draškovićeva 19) and the Department of Physiatry of the University Hospital for Tumours (Ilica 197). This structure was confirmed by the systematisation process in 2011, when the divisions which were a part of the Department of Rheumatology, Physical Medicine and Rehabilitation became separate departments (for adults and children) at the University Department. In the following part we shall briefly present the historical development and the contribution of these associated departments that are a part of the overall structure of our University Department.

The treatment of physical medicine and rehabilitation was first introduced in 1951, during the early years of the University Hospital operation, as part of the rehabilitation of trauma patients. The Department of Physical Medicine and Rehabilitation was established in 1964, when the old part of the University Hospital was renovated and rebuilt. The offices of the Department were located in the basement of the building, where they remain to this day. Ever since that period, the Department has been equipped with electrotherapy devices and a kinesiotherapy room. It is also worth noting that occupational therapy was developed as part of the physical medicine and rehabilitation. The heads of this Unit, which was later the Department of Physical Medicine and Rehabilitation were the following experts (mentioned in order): Prim. Branko Harmustek, MD, Marijan Hlavka, MD, Vladimir Vinceković, MD, Prim. Ružica Nikolić, MD, Prim. Dušanka Kostenarović-Živković (from 1984 to 2004), Nina Bival Fak (from 2004 to 2012), and Prim. Tatjana Nikolić (from 2012 to the present day). Two major renovations of the Department took place in 1987 and in 2004. The aforementioned renovation process was carried out from 2004 to 2005 (donation was made by the people of Japan), and at that time the new equipment and devices for electrotherapy and rehabilitation were purchased, which were in accordance with the modern requirements. During the Croatian War of Independence, the University Hospital for Traumatology and the Department played a special role in the treatment and rehabilitation of the injured. As part of the activities of physiatry, rehabilitation and specialist consultative healthcare, osteoporosis was also one of the main activities carried out at the Department, so in 2000, the Outpatient Clinic for Osteoporosis was officially established at the University Hospital for Traumatology. From 2000 to 2004, the following doctors took turns working at the Outpatient Clinic for Osteoporosis: Dolores Car, MD (internist) and Tatjana Nikolić, MD (specialist in Physical Medicine and Rehabilitation), and in 2004 Gordana Tajsić joined their team (specialist in Physical Medicine and Rehabilitation). In 2012, a reorganisation of the physical therapy programme was

tjana Nikolić. Dva velika preuređenja Odjela bila su 1987. godine i 2004. – 2005. (donacija japanskog naroda) kada je nabavljena nova oprema i uređaji za elektroterapiju i rehabilitaciju, čime je učinjena prilagodba suvremenim zahtjevima. U Domovinskom su ratu Klinika za traumatologiju, a time i Odjel imali posebnu ulogu u zbrinjavanju ozljeđenika. U sklopu fizijatrijsko-rehabilitacijske specijalističko-konzilijarne djelatnosti u žarištu je djelovanja i osteoporoza pa je 2000. godine u Klinici za traumatologiju službeno osnovana Ambulanta za osteoporozu. Od 2000. do 2004. u Ambulanti su se izmjenjivale dr. Dolores Car (internistica) i dr. Tatjana Nikolić (spec. fizikalne medicine i rehabilitacije), a od 2004. godine priključuje im se i dr. Gordana Tajsić (spec. fizikalne medicine i rehabilitacije). Od 2012. u Kliničkoj jedinici za rehabilitaciju traumatoloških bolesnika dolazi do reorganizacije rada fizikalne terapije, kada se uvodi koncept rada po fizioterapijskim jedinicama. Tada se reorganizira i prostor, uz manju obnovu postojećih prostorija. Od jeseni 2014. godine dolazi do daljnjeg unaprjeđenja rada Kliničke jedinice za rehabilitaciju traumatoloških bolesnika, jer se uvodi rad u dvije smjene, i liječničkih ambulanta i fizikalne terapije.

Služba za rehabilitaciju onkoloških bolesnika osnovana je u sklopu Instituta za tumore u Zagrebu 1979. godine. Utemeljiteljica Službe, a istodobno i hrvatske onkološke rehabilitacije jest prof. dr. sc. Ruža Sabol, specijalistica fizikalne medicine i rehabilitacije i profesorica defektologije, koja je prethodno do 1974. radila na tadašnjem Odsjeku za rehabilitaciju djece naše Bolnice, a potom u Bolnici za rehabilitaciju djece Goljak. Odmah nakon osnivanja koncepcija rada usmjerena je na medicinsku i psihosocijalnu rehabilitaciju kao integralne dijelove kompleksnog liječenja onkološkog bolesnika. Dugogodišnjom suradnjom s Edukacijsko-rehabilitacijskim fakultetom i Visokom zdravstvenom školom/Zdravstvenim veleučilištem provodilo se i kontinuirano se provodi stručno usavršavanje i znanstveni rad u onkološkoj rehabilitaciji. Djelatnici Službe od početka su aktivno uključeni u rad različitih udruga onkoloških bolesnika, a profesorica Sabol bila je glavni inicijator uvođenja i dvaju neprofitnih, humanitarnih programa vezanih za rak dojke (1993.). To su *Reach to Recovery*, svjetski program u kojem rehabilitirana i stručno educirana bolesnica pruža psihosocijalnu potporu novooboljeloj; drugi je *Europa Donna Hrvatska*, u sklopu *Europske koalicije protiv raka dojke*, a odnosi se ponajprije na ranu dijagnostiku i liječenje te promicanje kvalitete života bolesnica s karcinomom dojke. Nakon umirovljenja profesorice Sabol 1990. voditeljica Službe (kasnije Kliničke jedinice) postaje mr. sc. Nada Kraljević do umirovljenja u ožujku 2020., kad ju je zamijenila dr. Senija Brnić. U posljednjih desetak godina djelatnost je izrazitije unaprijeđena zahvaljujući većem

carried out at the Unit for the Rehabilitation of Trauma Patients, due to the introduction of a different concept of work in which work duties were carried out in various physiotherapy units. Following that, the premises of the Unit were reorganised as well, and the existing rooms had undergone a small-scale renovation. In 2014, the working conditions at the Unit for the Rehabilitation of Trauma Patients have further improved with the introduction of shift work (the employees could work in two shifts). The working conditions of the outpatient units and physical therapy programme have improved as well.

The Unit for the Rehabilitation of Cancer Patients was established as part of the Institute for Tumours in Zagreb, in 1979. The founder of the Unit, as well as the person responsible for the introduction of the rehabilitation of cancer patients in Croatia (which was introduced at the same time) is Prof. Ruža Sabol, MD, PhD, a specialist in Physical Medicine and Rehabilitation and a professor of Special Education. Prior to this, up until 1974, Prof. Sabol, MD, PhD worked at the then Division for Rehabilitation of Children at our hospital, and following that, she worked at the Goljak Hospital, a special hospital for the rehabilitation of children. Immediately after its establishment, the concept of work at the Unit was focused on medical and psychosocial rehabilitation as integral parts of the complex treatment of cancer patients. Through long-term cooperation with the Faculty of Education and Rehabilitation Sciences and the College / University of Applied Health Sciences, professional training and scientific work was carried out and continues to be carried out in the field of rehabilitation of cancer patients. From the beginning, the employees of the Unit have been actively involved in the work of various associations of cancer patients, and Professor Sabol was the main initiator of the implementation and establishment of two non-profit, humanitarian programmes related to breast cancer (1993). The first programme is the *Reach to Recovery* programme, a worldwide programme in which a volunteer who has experienced a certain kind of breast cancer, who went through the rehabilitation process and is educated on the topic offers psychosocial support to a newly diagnosed patient. The second one is the *Europa Donna Croatia* programme, which is part of the European Breast Cancer Coalition, and which primarily refers to early diagnosis and treatment as well as the promotion of the quality of life of patients with breast cancer. Following the retirement of Prof. Sabol in 1990, Nada Kraljević, MSc became the head of the Unit (which later named the Clinical Unit), who continued to carry out that duty until her retirement in March 2020, when she was succeeded by Senija Brnić, MD. In the last decade. The activity has been significantly improved due to a larger number of employees,

broju djelatnika, novim fizikalnim postupcima uvedenim na listu HZZO-a, a napose dobivanjem novih većih i prikladnijih prostora preseljenjem u novi dio zgrade Klinike za tumore (2012. godine), nakon čega su nabavljeni i novi uređaji. Najnovije organizacijske promjene dogodile su se sistematizacijom 2015. godine, kada su ukinute Klinička jedinica za rehabilitaciju traumatoloških bolesnika i Klinička jedinica za rehabilitaciju onkoloških bolesnika te uklopljene u Polikliniku.

Klinika za reumatologiju, fizikalnu medicinu i rehabilitaciju povezana je s Hrvatskom ligom protiv reumatizma, najmasovnijom neprofitnom udrugom na državnoj razini koja okuplja bolesnike s reumatskim bolestima, kao i stručnjake koji se bave tom problematikom. Od osnutka sjedište joj je u klinici, a dosadašnji predsjednici bili su: I. Jajić (1992. – 2001.), T. Nemčić (2001. – 2009.), S. Grazio (2009. – 2013.) te F. Grubišić (2013. – 2017.). Više djelatnika Klinike bilo je ili trenutno jesu članovi Upravnog odbora Lige. Liga provodi brojne aktivnosti, među kojima su organizacija popularnih predavanja i tribina (od 2004. do 2020. u sklopu obilježavanja „Desetljeća kostiju i zglobova“), a djelatnici Klinike u njima su vrlo često aktivno sudjelovali. Liga je objavila 28 priručnika za bolesnike (u 21 su autori ili koautori djelatnici Klinike), kao i dvije knjige (koautori su također djelatnici Klinike), a od 1992. do 2016. objavljivala je svoje glasilo *Reuma* (ranije *Reumatičar*) (glavni i odgovorni urednik: 1992. – 1998. I. Jajić, a 1998. – 2016. S. Grazio). Liga je članica udruge pacijenata pri EULAR-u (PARE) (predstavnik Lige je od 2008. F. Grubišić), Međunarodne udruge za ankilozantni spondilitis (ASIF) i Međunarodne zaklade za osteoporozu (IOF) (predstavnik Lige S. Grazio). Posljednjih desetak godina intenzivirale su se međunarodne aktivnosti Lige. Tako je Liga jedan od utemeljitelja AGORA-e, platforme za organizacije osoba s reumatskim bolestima južne Europe (u sklopu PARE-a) (član Stalnog odbora od 2011. do 2017. godine bio je F. Grubišić). Njezini predstavnici redovito sudjeluju na EULAR-ovoj godišnjoj konferenciji PARE-a. Liga je u svibnju 2011. organizirala međunarodni projekt, izložbu *Working Wonders Exhibition*, koja je održana pod visokim pokroviteljstvom predsjednika Republike Hrvatske, dok je u studenome 2014. organizirala vrlo uspješnu konferenciju PARE-a koja je okupila predstavnike svih udruga bolesnika iz Europe. Hrvatska liga protiv reumatizma bila je jedan od inicijatora tematske sjednice Odbora za zdravstvo Hrvatskog sabora posvećene koštano-mišićnim bolestima (listopad 2009.), kada je i u Hrvatskoj predstavljena i prihvaćena Europska povelja o radu bolesnika s koštano-mišićnim bolestima. Također, Liga je jedan od utemeljitelja inicijative *Fit for work – Hrvatska*.

U daljnjem dijelu ovog priloga o klinici navedeni su stručni i znanstveni skupovi u čijoj smo organizaciji



FIGURE 8. Medical doctors of the Department – March 2016. Seated (from left to right): prim. Tomislav Nemčić, MD, PhD; Assistant Professor Valentina Matijević, MD, PhD; Diana Balen, MD, MSc; Professor Simeon Grazio, MD, PhD; Nada Kraljević, MD, MSc; prim. Tatjana Nikolić, MD. Standing (from left to right): Senija Brnić, MD; Iva Popović, MD, PhD; Vedran Brnić, MD; Gordana Tajsić, MD; Dubravka Sajković, MD; prim. Frane Grubišić, MD, MSc; Ines Doko, MD; Hana Skala Kavanagh, MD. Missing: Professor, Zrinka Jajić, MD, PhD; Velimir Šušak, MD; Jelena Marunica Karšaj, MD.

SLIKA 8. Liječnici klinike – ožujak 2016. Sjede slijeva nadesno: prim. dr. sc. Tomislav Nemčić, doc. dr. sc. Valentina Matijević, mr. sc. Diana Balen, prof. dr. sc. Simeon Grazio, mr. sc. Nada Kraljević, prim. dr. Tatjana Nikolić; stoje slijeva nadesno: dr. Senija Brnić, dr. sc. Iva Popović, dr. Vedran Brnić, dr. Gordana Tajsić, dr. Dubravka Sajković, prim. mr. sc. Frane Grubišić, dr. Ines Doko, dr. Hana Skala Kavanagh. (nedostaju: prof. dr. sc. Zrinka Jajić, dr. Velimir Šušak i dr. Jelena Marunica Karšaj).

new physical procedures introduced in the list of programmes by the Croatian Health Insurance Fund (CHIF), and especially by obtaining new, larger, and more suitable premises by moving to a new part of the building of the University Hospital for Tumours (in 2012). Following this move, new devices were purchased as well. The most recent organisational changes took place with the systematisation process in 2015, when the Clinical Unit for the Rehabilitation of Trauma Patients and the Clinical Unit for the Rehabilitation of Cancer Patients were closed as independent units and reintroduced as the associated units of the Outpatient Clinic of the Department.

The Department of Rheumatology, Physical and Rehabilitation Medicine is affiliated with the Croatian League against Rheumatism, the largest non-profit association in the country that brings together patients with rheumatic diseases, as well as experts dealing with this issue. Its seat has been at the Department since its establishment, and its presidents were the following experts: I. Jajić (1992 – 2001), T. Nemčić (2001 – 2009), S. Grazio (2009 – 2013) and F. Grubišić (2013 – 2017). Various employees of the Department were or currently are members of the Management Board of this League. The League carries out numerous activities,

značajno sudjelovali, značajniji udžbenici i knjige, kao i poglavlja u knjigama te značajniji znanstveni radovi, sve u zadnjih dvadesetak godina, a nakon zadnje objavljenih monografija kako Klinike tako i bolnice.

DJELATNOSTI KLINIKE

Sadašnja djelatnost Klinike za reumatologiju, fizikalnu medicinu i rehabilitaciju Medicinskog fakulteta Sveučilišta u Zagrebu povezana je s njezinom dugom tradicijom, ali i s aktivnostima i poboljšanjima koja su učinjena u zadnjih petnaestak godina, te je sve navedeno oblikovalo njezin sadašnji rad.

Na Klinici se provode dijagnostika, liječenje i rehabilitacija različitih bolesti i stanja, ponajprije onih koja se odnose na lokomotorni sustav, kao što su najčešće upalne reumatske bolesti, degenerativne bolesti, bolni sindromi (napose vertebralni i vertebrogeni), neurorazvojni poremećaji djece, posttraumatska stanja, stanja nakon operacija i drugih oblika liječenja onkoloških bolesnika te osteoporoza i njezine posljedice.

Multidisciplinarni pristup temelj je dijagnostike, liječenja i rehabilitacije hospitaliziranih i ambulantnih bolesnika, za što je neophodan timski rad. Suradnja se odnosi na članove tima unutar same klinike (liječnik – specijalist ili uži specijalist, fizioterapeut, radni tera-

including the organisation of popular lectures and discussions (from 2004 to 2020 it was involved in these activities on the occasion of the Bone and Joint Decade) and the employees of the Department often actively participate in these events. The League has published 28 manuals for patients (21 of them are authored or co-authored by the employees of our University Department), and from 1992 to 2016 it published its newsletter *Reuma* (formerly called *Reumatičar*). The editors-in-chief of this newsletter were the following experts: I. Jajić (1992 – 1998) and S. Grazio (1998 – 2016)). The League is a member of the EULAR PARE (People with Arthritis and Rheumatism in Europe) association (since 2008 its representative has been Associate Prof. F. Grubišić), the Axial Spondyloarthritis International Federation (ASIF) and the International Osteoporosis Foundation (IOF) (the representative of the League: S. Grazio). In the last decade, the international activities of the League have been reinforced. Thus, the League became one of the founders of AGORA, a platform of organisations of people with rheumatic diseases in southern Europe (as part of the PARE association) (from 2011 to 2017, F. Grubišić was a member of the Standing Committee). Its representatives are regular and active members at the EULAR PARE annual conference. In May 2011, the League organised an international project, an exhibition titled *Working Wonders Exhibition*, which was held under the auspices of Ivo Josipović, the then president of the Republic of Croatia. Furthermore, in November 2014, the League organised a highly successful PARE conference which was the meeting place of representatives of all patient groups across Europe. The Croatian League against Rheumatism was one of the main initiators of thematic meeting of the Health Committee of the Croatian Parliament which was dedicated to musculoskeletal disorders (in October 2009). At the same time, the European Charter on the work of patients with musculoskeletal disorders was presented and accepted in Croatia. In addition to that, the League is one of the founders of the “Fit for Work Croatia” initiative.

In the following part, also dedicated to the activities of the Department, we shall mention the professional and scientific meetings that we have organised and participated in, the significant textbooks and books, as well as book chapters and significant scientific papers. All of these works were published in the last twenty years, and in the period after the last published monographs of the Department and the UHC.

THE ACTIVITIES OF THE DEPARTMENT

The current activity of the Department of Rheumatology, Physical and Rehabilitation Medicine of the School of Medicine, University of Zagreb is connected

peut, logoped, defektolog – rehabilitator, psiholog, medicinska sestra te bolesnik, odnosno roditelj), ali i izvan nje. Pritom je važno naglasiti da je bolesnik aktivan član tima koji s napredovanjem liječenja i rehabilitacije postaje sve odgovorniji za ishode. Specifičnost za djecu s neurorazvojnim i sličnim poremećajima jest da multidisciplinarni tim pruža potporu i usmjerava roditelje o postupanjima, pravima i mogućnostima njihova participiranja. Krajnji cilj naših djelovanja jest ponov-



FIGURE 9. Children's (re)habilitation – kinesiotherapy
SLIKA 9. Dječja (re)habilitacija – kinezioterapija

no uključivanje bolesnika u obiteljsku, socijalnu i radnu sredinu.

U Klinici je zaposleno 18 liječnika specijalista fizijatarata (od toga 5 subspecijalista reumatologa), 3 liječnika na specijalizaciji (jedan iz fizikalne medicine i rehabilitacije i dva liječnika na specijalizaciji iz reumatologije), 1 defektolog-rehabilitator, 2 logopeda, 1 psiholog, 55 fizioterapeuta (2 magistra, 7 diplomiranih i 46 prvostupnika fizioterapije), 2 prvostupnika radne terapije, 18 medicinskih sestara (od toga 3 prvostupnice sestrinstva), 1 tajnica i 2 administratora (u sklopu Poslovnog centra).

Klinika se organizacijski sastoji od Odjela za reumatske bolesti, fizikalnu medicinu i rehabilitaciju odraslih, Odjela za rehabilitaciju djece i Poliklinike.

Odjel za reumatologiju, fizikalnu medicinu i rehabilitaciju odraslih ima 17 postelja. Voditelj odjela je doc. dr. sc. Frane Grubišić. Na odjelu se hospitaliziraju bolesnici kojima je potrebna visokodiferentna dijagnostika i terapija, a prvenstveno se radi o bolesnicima s upalnim i drugim reumatskim bolestima, kao i bolnim sindromima (najčešće vertebrogenim) u fazi pogoršanja. U dijagnosticiranju se koriste sve suvremene metode, koje između ostaloga uključuju laboratorijske pretrage (iz krvi i urina, sinovijske tekućine i/ili drugih tkiva), metode oslikavanja (npr. dijagnostički ultrazvuk s ojačanim *dopplerom*, klasična radiografija, CT, MR, scintigrafija skeleta) i neurofiziološke pretrage (npr. EMNG). Inter-

with its long tradition, but also with the activities and improvements made over the last fifteen years. Moreover, all of the aforementioned endeavours have helped shape its current operative activities.

The diagnosis, treatment and rehabilitation of various diseases and conditions are carried out at the Department. These conditions mainly include diseases of the locomotor system, the most common inflammatory rheumatic diseases, degenerative diseases, pain syndromes (especially vertebral and vertebrogenic), neurodevelopmental disorders in children, post-traumatic conditions, post-operative conditions, and other forms of treatment of cancer patients, as well as osteoporosis and osteoporosis-related complications.

A multidisciplinary approach is the basis of diagnosis, treatment and rehabilitation of inpatients and outpatients, which requires effective teamwork. The concept of cooperation implies the cooperation between team (staff) members within the Department (physicians – specialists or subspecialists, physiotherapists, occupational therapists, speech therapists, special education teachers – educational rehabilitators, psychologists, nurses and patients or their parents), but also outside of the Department. With this in mind, it is important to highlight the fact that the patient is an active member of the team who, with the progress of treatment and rehabilitation, becomes increasingly responsible for the treatment outcomes. The unique element of the multidisciplinary approach to children with neurodevelopmental and similar disorders is that a multidisciplinary team provides support to the parents of these children and gives them more insight into the procedures, and their rights and opportunities in relation to their participation in this process. The ultimate goal of our activities is the reintegration of patients in their family, social and work environment.

The number of staff members of the University Department is the following: 18 specialists in Physical Medicine and Rehabilitation (5 of them are subspecialists in Rheumatology), 3 residents (1 in the field of Physical Medicine and Rehabilitation and 2 residents in the field of Rheumatology), 1 special education teacher-educational rehabilitator, 2 speech therapists, 1 psychologist, 55 physiotherapists (2 of them hold a Master's degree in Physiotherapy, 7 of them are Graduated Physiotherapists, and 46 of them hold a Bachelor's degree in Physiotherapy), 2 employees who hold a Bachelor's degree in the field of occupational therapy, 18 nurses (3 of them hold a Bachelor's degree in Nursing), 1 secretary and 2 hospital administrators (employed at the Business centre of the Department).

The organisational structure of the University Department consists of the following units: the Division of Rheumatic Diseases, Physical Medicine and Rehabilitation of Adults, the Division for the Rehabilitation of Children, and the Outpatient Clinic.



FIGURE 10. Department Board – April 2021
(from left to right): Ivan Anzulović, mag. physioth.;
Professor Simeon Grazio, MD, PhD (Haed of the Department);
Associate Professor Valentina Matijević, MD, PhD;
Assistant Professor Frane Grubišić, MD, PhD;
Senija Brnić, MD; prim. Tomislav Nemčić, MD, PhD;
prim. Tatjana Nikolić, MD.

SLIKA 10. Stručni kolegij klinike – travanj 2021.
Slijeva na desno: Ivan Anzulović, mag. physioth.;
prof. prim. dr. sc. Simeon Grazio, dr. med. (predstojnik klinike);
izv. prof. prim. dr. sc. Valentina Matijević, dr. med.;
doc. prim. dr. sc. Frane Grubišić, dr. med.; Senija Brnić dr. med.;
prim. dr. sc. Tomislav Nemčić, dr. med.;
prim. Tatjana Nikolić, dr. med.

vencije se odnose na farmakološko liječenje (uključivo i terapiju biološkim lijekovima i ciljanim sintetskim molekulama) i liječenje nefarmakološkim, najčešće fizikalno-terapijskim modalitetima liječenja.

Odjel za rehabilitaciju djece ima 11 postelja, od toga dva u sklopu programa „Majka – dijete“. Voditelj odjela je izv. prof. dr. sc. Valentina Matijević. Odjel je jedina takva organizacijska jedinica u Hrvatskoj koja djeluje u sklopu klinike odnosno kliničkoga bolničkog centra. Na odjelu se hospitaliziraju djeca s neurorazvojnim oštećenjima, a (re)habilitacija se provodi u sklopu multidisciplinarnoga tima (liječnik – specijalist, logoped, rehabilitator, klinički psiholog, fizioterapeut i medicinska sestra) i to od rođenja djeteta (što uključuje i rano dijagnosticiranje poremećaja i rane postnatalne intervencije) do punoljetnosti.

U Dnevnoj bolnici za odrasle (2 stolca/postelje) obrađuju se i liječe uglavnom bolesnici s upalnim reumatskim bolestima, a u Dnevnoj bolnici za djecu (2 stolca/postelje) bolesnici s neurorazvojnim poremećajima. Načela rada (dijagnostika, liječenje/rehabilitacija) za obje Dnevne bolnice ista su kao i za hospitalizirane, s tim da ti bolesnici prvenstveno zbog težine svog zdravstvenoga stanja ne trebaju prekonozni boravak na klinici. Sukladno općem trendu, zadnjih godina broj bolesnika obrađenih i liječenih u okviru Dневnih bolnica stalno se povećava.

Poliklinika u svojem sastavu na lokaciji Vinogradska 29 uključuje specijalističko-konzilijarne djelatnosti za

There are currently 17 beds at the Division of Rheumatology, Physical Medicine and Rehabilitation of Adults. The head of the Division is Associate Prof. Frane Grubišić, MD, PhD. Patients in need of high-quality differential diagnosis and therapy are hospitalised at the Division, and these are primarily patients with inflammatory and other types of rheumatic diseases, as well as pain syndromes (most often vertebro-genic) in the period of exacerbation. All modern methods are used in the diagnosis, which, among other things, include laboratory tests (blood tests, urine tests, synovial fluid analysis and/or the analysis of other tissues), imaging methods (e.g., contrast-enhanced colour Doppler ultrasound, standard radiography, CT, MRI, skeletal scintigraphy) and neurophysiological tests (e.g., electromyoneurography (EMNG)). Interventions are carried out in relation to pharmacological treatment (including therapy with biologic drugs and targeted synthetic drugs) and treatment with non-pharmacological treatment modalities mostly focused on physical therapy.

The Division for the Rehabilitation of Children has 11 beds, and two of them are reserved for the “Mother and Child” programme. The head of the Division is Prof. Valentina Matijević, MD, PhD. The Division is the only organisational unit of its kind in Croatia which operates as a part of a University Department, that is, a University Hospital Centre. Children with neurodevelopmental disorders are hospitalised at the Division, and (re)habilitation is carried out by our multidisciplinary team (physician – specialist, speech therapist, educational rehabilitator, clinical psychologist, physiotherapist, and nurse), from the child’s birth (which also includes the early diagnosis of the disorder and early postnatal interventions) to adulthood.

Patients with inflammatory rheumatic diseases are mostly diagnosed and treated at the Outpatient Clinic for Adults (2 chairs/beds) and patients with neurodevelopmental disorders are mostly treated at the Outpatient Clinic for Children (2 chairs/beds). The principles of work (diagnosis, treatment/rehabilitation) for both outpatient clinics are the same as principles of work in inpatient care, with the only exception being that outpatients do not have to stay overnight due to the mild course of their disease. In accordance with the general trend, the number of patients diagnosed and treated at the outpatient clinics has been constantly increasing in recent years.

The activities of specialist consultative healthcare for adults and children are carried out at the Outpatient Clinic (organisational unit) located at Vinogradska 29. The deputy head of the Outpatient Clinic is Prim. Tomislav Nemčić, MD. The Outpatient Clinics for Physiatry for Adults are related to the casuistry of general physiatry, and their activities mainly include deal-

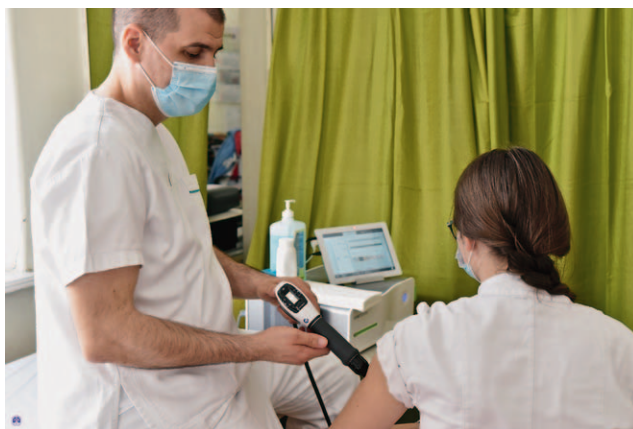


FIGURE 11. Physical therapy – therapy of extracorporeal shock wave
SLIKA 11. Fizikalna terapija – primjena izvantjelesnog udarnoga vala



FIGURE 12. Physical therapy – traction of the lumbar spine
SLIKA 12. Fizikalna terapija – trakcija slabinske kralježnice

odrasle i za djecu. V. d. voditelja Poliklinike je prim. dr. sc. Tomislav Nemčić. Fizijatrijske ambulante za odrasle odnose se na opću fizijatrijsku kazuistiku, a dominiraju bolni sindromi (npr. vertebrogeni), neurološke bolesti i posttraumatska stanja. U tim ambulantama trenutno rade prim. dr. sc. Tomislav Nemčić, prim. dr. sc. Diana Balen i mr. sc. Danijela Klarić, dr. med. Ambulanta za osteoporozu uključuje prevenciju i liječenje osteoporoze i njezinih posljedica kao „tihe epidemije“, odnosno još uvijek nedovoljno prepoznate bolesti suvremenoga svijeta, a u njoj radi prim. dr. sc. Diana Balen. Reumatološke (subspecijalističke) ambulante odnose se na obradu i liječenje bolesnika s upalnim reumatskim bolestima (npr. reumatoidni artritis, psorijatični artritis, ankilozantni spondilitis, enteropatski artritis i dr.), a uključuju posebnu Ambulantu za spon-

ing with pain syndromes (e.g., vertebrogenic), neurological disorders and post-traumatic conditions. The experts who are currently working at these outpatient units are: Prim. Tomislav Nemčić, MD, Prim. Diana Balen, MD, Danijela Klarić, MD. At the Outpatient Clinic for Osteoporosis the procedures of prevention and treatment of osteoporosis and its complications are carried out. Osteoporosis is also known as a “silent epidemic”, i.e., a disease which severely affects the world population today and which is still not sufficiently researched. Prim. Diana Balen, MD is working at this Outpatient Clinic. At the Outpatient Clinics for Rheumatology (subspecialist clinics) the procedures of diagnosis and treatment of patients with rheumatic diseases are carried out (e.g., rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis, enteropathic arthritis, etc.). In addition to that, a special Outpatient Clinic for spondyloarthritis also operates as part of the aforementioned clinics, considering that, as a Referral Centre of the Ministry of Health of the Republic of Croatia, the University Department has a special interest in this group of inflammatory rheumatic diseases. The experts who are working at this Outpatient Clinic are: Prof. Simeon Grazio, MD, PhD, Assistant Prof. Frane Grubišić, MD, PhD, Hana Skala Kavanagh, MD and Ines Doko Vajdić, PhD). At the Outpatient Clinic for Electromyoneurography, the EMNG test is performed by using the most up-to-date, recently acquired device, and currently this test is performed by two specialists (Prim. Tomislav Nemčić, MD and Prim. Diana Balen, MD). The Outpatient Clinic for the ultrasound of the locomotor system greatly facilitates the diagnosis of various diseases and conditions, and the contrast-enhanced Doppler helps in identifying increased blood flow, which is present in inflammation. At the University Department, this test is currently carried out by four specialists and subspecialists (Prim. Tomislav Nemčić, MD, Hana Skala Kavanagh, MD, Ines Doko Vajdić, PhD, and Prim. Diana Balen, MD).

The Outpatient Clinics for Physiatry are focused on the diagnosis and indication of therapeutic and rehabilitation methods for neurodevelopmental disorders, and three of our physicians currently work at these clinics (Prof. Valentina Matijević, MD, PhD, Velimir Šušak, MD and Jelena Marunica Karšaj, MD). The Speech Therapy and Special Education (Rehabilitation) units (outpatient clinics) are also operating as specialist consultative healthcare units for children, and the experts working at these clinics also operate as members of the multidisciplinary team (in addition to the experts from the University Department and the Outpatient Clinic). A unit of the University Department, where activities related to the rehabilitation of cancer patients are carried out, is located at Ilica 197 (the experts working at this Unit are: specialists in



FIGURE 13. Physical Therapy – kinetek
SLIKA 13. Fizikalna terapija – kinetek



FIGURE 14. Physical therapy – lymphatic drainage of the hand
SLIKA 14. Fizikalna terapija – limfna drenaža ruke

diloartritise, s obzirom na to da Klinika kao Referentni centar Ministarstva zdravstva RH ima poseban interes za tu grupu upalnih reumatskih bolesti. U toj ambulanti rade prof. dr. sc. Simeon Grazio, doc. dr. sc. Frane Grubišić, dr. Hana Skala Kavanagh i dr. sc. Ines Doko Vajdić). U Ambulanti za elektromio(neuro)grafiju provodi se ta pretraga uz korištenje najsuvremenijeg nedavno nabavljenoga uređaja, a trenutno tu pretragu radi dvoje liječnika specijalista (prim. dr. sc. Tomislav Nemčić i prim. dr. sc. Diana Balen). Ambulanta za ultrazvuk lokomotornoga sustava uvelike olakšava dijagnosticiranje različitih bolesti i stanja, a osnaženi *doppler* pomaže u identificiranju pojačane prokrvljenosti napose izražene u upali. Pretragu na klinici trenutno radi četvero liječnika specijalista ili užih specijalista (prim. dr. sc. Tomislav Nemčić, dr. Hana Skala Kavanagh, dr. sc. Ines Doko Vajdić i prim. dr. sc. Diana Balen).

Fizijatrijske ambulante za djecu usmjerene su na dijagnosticiranje i indiciranje terapijsko-rehabilitacijskih metoda kod neurorazvojnih poremećaja, a u njima trenutno radi troje liječnika (prof. dr. sc. Valen-

Physiatry: Senija Brnić, MD and Vedran Brnić, MD). At this location, there is also an Outpatient Clinic for General Physiatry (Prof. Tihomir Žiger, MD, PhD is working at this unit). A unit of the University Department, where activities related to the rehabilitation of trauma patients are carried out, is located at Draškovićeveva 19 (the experts working at this Unit are: physicians – specialists: Prim. Tatjana Nikolić, MD, Iva Rabić Popović, PhD, Gordana Tajsić, MD and Dubravka Sajković, MD). In addition to this unit, two Outpatient Clinics for Osteoporosis are also located at this site (the experts working there are Prim. Tatjana Nikolić, MD and Gordana Tajsić, MD), and at these clinics, the diagnostic test of bone densitometry can be performed on patients.

On an annual basis, approximately 1,200 patients are hospitalised at the University Department, and about a hundred of these patients are children up to the age of three and their mothers (as part of the “Mother and Child” programme). On an annual level, we have approximately 10,400 days of hospital stays, while treatment lasts about 8 days on average. An average of 1,300 patients visit the Outpatient Clinic annually. On an annual basis, approximately 50,000 patients are treated at the outpatient care and consultative healthcare units. Approximately 3,700 patients are diagnosed in the span of one year (electromyography, contrast-enhanced colour Doppler ultrasound and bone densitometry).

In pharmacological treatment, we apply the most modern drugs, both systemically and locally. In terms of locally administered drugs, glucocorticoids are used in most cases, while hyaluronan injections are used less often. Systemic treatment, in addition to symptomatic treatment, also includes biologic drugs and targeted synthetic antirheumatic drugs that change the course of the disease. These are mostly used for the most common inflammatory rheumatic diseases (rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis, non-radiographic axial spondyloarthritis), and this is an area in which we are extremely experienced. According to the data from January 2020, our University Department was the third organisational unit in Croatia in terms of the number of patients with rheumatic diseases treated with biologic drugs, and the first organisational unit out of all organisational units in Croatia whose origin is primarily based on physiatry. Thus, we significantly improve the prognosis for patients with these disabling chronic inflammatory rheumatic diseases, we provide a better quality of life for them and prolong their survival.

One of the benefits of our University Department is that, along with the application of drug therapy, we use functional treatment methods. At all of the sites we carry out outpatient physical therapy, organised in ac-

tina Matijević, dr. Velimir Šušak i dr. Jelena Marunica Karšaj). U specijalističko-konzilijarnoj zaštiti za djecu još imamo ambulantu logopeda i ambulantu rehabilitatora, koji i u ovom segmentu, osim Odjela i Dnevne bolnice, djeluju kao članovi multidisciplinarnoga tima. Na lokaciji Ilica 197 nalazi se dio klinike koji se odnosi na rehabilitaciju onkoloških bolesnika (spec. fizijatri: dr. Senija Brnić i dr. Vedran Brnić), uz jednu opću fizijatrijsku ambulantu (prof. dr. sc. Tihomil Žiger). Na lokaciji Draškovićeveva 19 nalazi se dio klinike koji se odnosi na rehabilitaciju traumatoloških bolesnika (liječnici – specijalisti: prim. dr. Tatjana Nikolić, dr. sc. Iva Rabić Popović, dr. Gordana Tajsić i dr. Dubravka Sajković), a tu su i dvije Ambulante za osteoporozu (prim. dr. Tatjana Nikolić i dr. Gordana Tajsić), s dijagnostičkom pretragom denzitometrijom skeleta.

Godišnje se na Klinici hospitalizira oko 1.200 bolesnika, od čega oko stotinjak djece do treće godine života sa svojim majkama u sklopu programa „Majka i dijete“. Na godišnjoj razini imamo oko 10.400 dana bolničkog liječenja, dok liječenje prosječno traje oko 8 dana. Kroz Dnevnu bolnicu prosječno prođe 1.300 bolesnika. U Polikliničko-konzilijarnoj zaštiti godišnje se liječi oko 50.000 bolesnika. Dijagnostički se godišnje obradi oko 3.700 bolesnika (elektromiografija, dijagnostički ultrazvuk i denzitometrija skeleta).

U farmakološkom liječenju primjenjujemo najsuvremenije lijekove sistemski i lokalno, a kao potonji se najčešće primjenjuju glukokortikoidi, rjeđe hijaluronani. Sistemsko liječenje uz ono simptomatsko uključuje i biološke lijekove i ciljane sintetske molekule antireumatika koji mijenjaju tijek bolesti i to za najčešće upalne reumatske bolesti (reumatoidni artritis, psoriatični artritis, ankilozantni spondilitis, neradiografski aksijalni spondiloartritis), u čemu imamo zavidno iskustvo. Naime, prema podacima iz siječnja 2020. Klinika je bila treća po redu organizacijska jedinica u Hrvatskoj po broju liječenih reumatoloških bolesnika biološkim lijekovima, a prva među svim organizacijskim jedinicama u Hrvatskoj temeljno fizijatrijske provenijencije. Tako bolesnicima s tim onesposobljavajućim kroničnim upalnim reumatskim bolestima znatno poboljšavamo prognozu i omogućujemo bolju kvalitetu života te im produžujemo preživljavanje.

Prednost je naše Klinike u tome što uz lijekove provodimo funkcionalno liječenje. Na svim lokacijama provodi se ambulanta fizikalna terapija, organizirana prema najsuvremenijem integriranom modelu, dok se fizioterapijsko liječenje provodi i u drugim organizacijskim jedinicama klinike (Odjeli, Dnevne bolnice) pod vodstvom glavnog fizioterapeuta klinike Ivana Anzulovića i uz pomoć voditeljice fizioterapije Poliklinike Štefanije Opalin, s voditeljicama pridruženih jedi-

cordance with the most modern integrated model, while physiotherapy treatment is carried out in other organisational units of the Department as well (divisions, outpatient clinics) under the guidance of the chief physiotherapist of the University Department, Ivan Anzulović, the lead physiotherapist of the Outpatient Clinic, Štefanija Opalin, and the lead physiotherapists of the associated units, Renata Lončar Čigir and Mirna Crnković. In this sense, modern individual programmes of therapeutic exercises (kinesiotherapy) are carried out, along with various forms of physical therapy (thermotherapy, cryotherapy, electrotherapy, therapeutic ultrasound, electromagnetic therapy, light therapy, extracorporeal shock wave therapy (ESWT), etc.). Apart from our University Department, the activities related to the operation of the Outpatient Unit for Physiotherapy are also carried out in other units of the UHC. Work (occupational) therapy, practices of prescribing and education on the use of rehabilitation equipment are also part of the interventions that we carry out. In cancer patients, rehabilitation is part of a complex treatment process which is present in all stages of the disease, especially after surgery. It should be noted that, the comprehensiveness of the psychosocial and somatomotor areas of human life is perhaps most evident during this rehabilitation process. Therefore, in the case of these patients, as well as in the case of all chronic diseases and conditions, psychosocial support is applied (e.g., in cooperation with the Croatian League against Rheumatism, breast cancer awareness associations, the associations of laryngectomees, and the colostomy associations), which significantly contributes to a more favourable outcome. Complementary support therapy (e.g., music therapy) is sometimes used as well. In the comprehensive rehabilitation of trauma patients, the activities are focused on polytraumatised patients, burn injuries, spinal injuries, hand injuries, pelvic injuries, sports injuries, orthopaedic rehabilitation, etc. The work of speech therapists, educational rehabilitators, and clinical psychologists, that are a part of a multidisciplinary team, should be especially highlighted, as it is particularly important in the (re)habilitation of children with developmental disabilities.

The diagnosis and treatment of patients with inflammatory rheumatic diseases in which basically any organ or organ system can be affected (heart, lungs, liver, spleen, intestines, kidneys, central and peripheral nervous system, skin, eyes, etc.) are examples of cooperation with physicians and other health professionals of all departments and divisions within this UHC, and if need for that arises, outside of it. Collaboration and multidisciplinary approach are the only factors which are necessary in order to achieve the optimal quality of care of such patients. As part of our collaboration with

nica Renatom Lončar Čigir i Mirnom Crnković. U tom smislu primjenjuju se suvremeni individualni programi terapijskih vježba (kinezioterapija), uz provođenje različitih oblika fizikalne terapije (termoterapija, krioterapija, elektroterapija, terapijski ultrazvuk, elektromagnetoterapija, svjetlosna terapija, terapija izvantjelesnim udarnim valovima – ESWT itd.). Rad fizioterapeutske klinike osim u našoj Klinici provodi se i u drugim klinikama KBC-a. Radna (okupacijska) terapija, propisivanje i edukacija o primjeni rehabilitacijskih pomagala također su dio naših intervencija. Kod onkoloških bolesnika rehabilitacija je dio kompleksnog liječenja prisutnog u svim stadijima bolesti, a napose nakon kirurškog zahvata. Inače, kod te rehabilitacije možda najviše dolazi do izražaja sveobuhvatnost psihosocijalnih i somatomotoričkih područja ljudskog života. Stoga se kod tih bolesnika, ali i svih kroničnih bolesti i stanja primjenjuje psihosocijalna potpora (npr. i u suradnji s Hrvatskom ligom protiv reumatizma, s udrugama žena liječenih zbog raka dojke, udrugom laringektomiranih osoba, udrugom osoba s koloileurostomom), što znatno pridonosi sveukupnomu povoljnijem ishodu. Katkad se primjenjuje i komplementarna suportivna terapija (npr. terapija glazbom). U sveobuhvatnoj rehabilitaciji traumatoloških bolesnika specifičnosti rada su politraumatizirani bolesnici, opekline ozljede, spinalne ozljede, ozljede šake, ozljede zdjelice, sportske ozljede, ortopedska rehabilitacija itd. Posebno valja istaknuti rad logopeda, rehabilitatora i kliničkog psihologa kao dijela multidisciplinarnoga tima, što napose dolazi do izražaja u (re)habilitaciji djece s nerazvojnim smetnjama.

Primjeri suradnje s liječnicima i drugim zdravstvenim djelatnicima svih klinika i zavoda samog KBC-a, a prema potrebi i izvan njega, jesu obrada i liječenje bolesnika s upalnim reumatskim bolestima u kojih može biti zahvaćen praktički bilo koji organ ili organski sustav (srce, pluća, jetra, slezena, crijeva, bubrezi, središnji i periferni živčani sustav, koža, oči itd.). Samo se suradnjom i multidisciplinarnim pristupom postiže optimalna kvaliteta skrbi za te bolesnike. U sklopu suradnje s drugim strukama vrijedno je navesti suradnju s neurolozima – npr. bolesnici s bolestima i oštećenjima gornjeg i donjega motornog neurona kao što su vertebralni i vertebrogeni sindromi, stanja nakon cerebrovaskularnog inzulta, akutna i kronična bolna stanja itd.; kirurzima, traumatolozima, neurokirurzima i anesteziolozima – npr. akutna i kronična bolna stanja, stanja nakon traumatoloških, neurokirurških operacija i operacija probavnog trakta; ginekolozima i urolozima – npr. problemi inkontinencije, postoperativna stanja; ginekolozima – opstetričarima – npr. ocjena stanja i edukacije trudnica; pedijatrima – npr. neurorazvojni poremećaji, djeca s upalnim reumatskim bolestima, s

other professions, it is important to mention our collaboration with: neurologists (for example, in the case of patients with diseases and damage of the upper and lower motor neurons, such as vertebral and vertebro-genic syndromes, conditions following cerebrovascular accident, acute and chronic pain conditions, and similar conditions), surgeons, traumatologists, neurosurgeons and anaesthesiologists (for example, in the case of acute and chronic pain conditions, conditions following trauma surgery, neurosurgery or gastrointestinal surgery), gynaecologists and urologists (for example, in the case of incontinence problems, post-operative conditions, gynaecologists – obstetricians (for example, in the case of assessment of the condition and education of pregnant women), paediatricians (for example, in the case of neurodevelopmental disorders, children with inflammatory rheumatic diseases and tumours, premature babies), dermatologists (for example, in the case of psoriasis, scleroderma), oncologists (for example, in the case of women undergoing treatment after mastectomy or other surgical procedures), cardiologists (for example, in the case of complications following myocardial infarction), pulmonologists (for example, in the case of COPD and malignancies) endocrinologists (for example, in the case of osteoporosis and acromegaly), gastroenterologists (for example, in the case of percutaneous endoscopic colostomy and incontinence) and nephrologists (for example, in the case of haemodialysis patients). Collaboration with the Clinical Institute of Diagnostic and Interventional Radiology and the Clinical Institute of Chemistry is particularly valuable and useful in the diagnosis of the diseases and conditions of the locomotor system. The employees of the Outpatient Clinic dealing with the rehabilitation of trauma patients (located at Draškovićeva 19) work closely with surgeons and other physicians of the University Hospital for Traumatology (including the Intensive Care Unit), while the employees dealing with the rehabilitation of cancer patients (the Outpatient Clinic located at Ilica 197) work closely with oncologists, surgeons, and other physicians who work at the University Hospital for Tumours.

The specificity of this University Department is that it operates at three different locations, and some units of the University Department are located at four separate buildings at the main site (at Vinogradska), which, in some ways, complicates its operation. At the location at Vinogradska 29, the University Department is located on the first floor of building number 7 (this is where the outpatient clinics and outpatient clinic's unit for physical therapy for adults are located), on the fifth floor of building number 5 (this is where the outpatient clinics and outpatient clinic's Unit for Physical Therapy for Children are located), in building number 28 (this

tumorima, nedonošad; dermatoloziima – npr. psorijaza, sklerodermija; onkoloziima – npr. žene u tretmanu nakon mastektomije ili drugih kirurških zahvata; kardioloziima – npr. stanje nakon infarkta miokarda; pulmoloziima – npr. KOPB, malignomi; endokrinoloziima – npr. osteoporoza, akromegalija; gastroenteroloziima – npr. perkutane stome, inkontinencija; nefroloziima – npr. bolesnici na hemodijalizi. U dijagnostičiranju bolesti i stanja lokomotornog sustava napose je vrijedna i korisna suradnja s Kliničkim zavodom za dijagnostičku i intervencijsku radiologiju i s Kliničkim zavodom za kemiju. Djelatnici Poliklinike koji se bave rehabilitacijom traumatoloških bolesnika (lokacija Draškovićeva 19) usko surađuju s kirurzima i drugim liječnicima Klinike za traumatologiju (uključujući i jedinicu intenzivne skrbi), dok djelatnici koji se bave rehabilitacijom onkoloških bolesnika (lokacija Ilica 197) usko surađuju s onkoloziima, kirurzima i drugim liječnicima Klinike za tumore.

Specifičnost je Klinike da radi na tri različite lokacije, a unutar glavne lokacije (Vinogradska ul.) dijelovi klinike su smješteni u četiri odvojene zgrade, što unekoliko usložnjava rad. Klinika je na lokaciji Vinogradska 29 smještena u prostorima I. kata zgrade br. 7 (ambulante i fizikalna terapija polikliničkog dijela za odrasle), na V. katu zgrade br. 5 (ambulante i fizikalna terapija polikliničkog dijela za djecu), u zgradi br. 28 (Odjel za reumatske bolesti, fizikalnu medicinu i rehabilitaciju, Odjel za rehabilitaciju djece i Dnevne bolnice za odrasle i za djecu) te u zgradi br. 24 (predstojnik, tajništvo, biblioteka, sobe liječnika, kabinet za praktičnu nastavu). Poliklinički dio klinike na lokaciji Ilica 197 smješten je u novom dijelu zgrade Klinike za tumore, dok je dio na lokaciji Draškovićeva 19 smješten u prostorijama zgrade Klinike za traumatologiju.

Sedmero liječnika Klinike ima naziv primarijusa (D. Balen, S. Grazio, F. Grubišić, Z. Jajić, V. Matijević, T. Nemčić, T. Nikolić), a petoro liječnika uže specijalizacije iz reumatologije (S. Grazio od 2001., Z. Jajić od 2003., F. Grubišić od 2008., H. Skala Kavanagh od 2017. i I. Doko Vajdić od 2018.), što govori u prilog visokog stupnja stručnosti, kao i posebnoga interesa za reumatske bolesti, dok je deset doktora znanosti (D. Balen, I. Doko Vajdić, S. Grazio, F. Grubišić, Z. Jajić, V. Matijević, T. Nemčić, P. Kovačević, I. Rabić Popović, T. Žiger), što je pokazatelj znanstvenih aktivnosti i interesa liječnika klinike.

Uz nastavu na više visokoškolskih ustanova te aktivno sudjelovanje na brojnim kongresima, simpozijima i radionicama edukacijski karakter Klinike očituje se u činjenici da je Klinika centar obuke Europskog odbora za fizikalnu i rehabilitacijsku medicinu (EBPRM) i jedini je takav centar u Hrvatskoj, uz trenutno 15 ustanova u cijeloj Europi s tim prestižnim naslovom. Veza-

is where the Division of Rheumatic Diseases, Physical Medicine and Rehabilitation, the Division for the Rehabilitation of Children and the Outpatient Clinics for Adults and Children are located), and in building number 24 (this is where the office of the head of the organisational unit, secretariat, library, doctors' offices, and the laboratory for practical classes (laboratory exercises) are located). The Outpatient Unit of the University Department located at Ilica 197 is situated in the new part of the building that belongs to the University Hospital for Tumours, while the unit located at Draškovićeveva 19 is located at the building that belongs to the University Hospital for Traumatology.

Seven physicians of the University Department have the title of Primarius (Prim). These physicians include: D. Balen, S. Grazio, F. Grubišić, Z. Jajić, V. Matijević, T. Nemčić, T. Nikolić. Moreover, five physicians of the University Department have the title of subspecialists in Rheumatology: S. Grazio (since 2001), Z. Jajić (since 2003), F. Grubišić (since 2008), H. Skala Kavanagh (since 2017), and I. Doko Vajdić (since 2018). The aforementioned facts speak in favour of the high degree of expertise of professionals working at our University Department, as well of the special interest of our physicians in rheumatic diseases. In addition to that, ten of our physicians have the title of Doctor of Philosophy (PhD): D. Balen, I. Doko Vajdić, S. Grazio, F. Grubišić, Z. Jajić, V. Matijević, T. Nemčić, P. Kovačević, I. Rabić Popović, and T. Žiger. This fact is an indicator of the scientific activities and interests of the physicians working at our University Department.

In addition to the teaching activities of employees, who teach classes at several institutions of higher education, and their active participation in numerous congresses, symposia and workshops, the educational character of the University Department is reflected in the fact that the University Department is the Training Centre of the European Board of Physical and Rehabilitation Medicine (EBPRM). It is the only such centre in Croatia, and it is one of the 15 institutions in Europe who have that prestigious title. In accordance with that, four physicians of our University Department have obtained the title of *Fellow of the European Board of Physical and Rehabilitation Medicine*, one of our physicians has obtained the title of *Senior Fellow of the European Board of Physical and Rehabilitation Medicine*, and all five of them have obtained the title of *Board Certified Trainer*, which was awarded to them by the EBPRM.

And, last but not least, it is important to note that our hard-working and long-time secretary, Marijana Bregni, deals with almost all of the activities that are carried out at our University Department. She performs all of her tasks diligently, meticulously, and with great professionalism and enthusiasm, often sacrificing

no s tim četiri liječnika klinike imaju naslov *Fellow of the European Board of Physical and Rehabilitation Medicine*, a jedan naslov *Senior Fellow of the European Board of Physical and Rehabilitation Medicine*, dok svih pet imaju naslov certificiranog trenera od strane navedenoga odbora (*Board Certified Trainer*).

Naposljetku, ne i najmanje važno jest da gotovo sve aktivnosti na Klinici prolaze kroz vrijedne ruke naše dugogodišnje tajnice Marijane Bregni, koja sve svoje zadatke obavlja marljivo, stručno, pedantno i s velikim entuzijazmom, često za Kliniku žrtvujući svoje slobodno vrijeme.

BUDUĆNOST KLINIKE

Klinika za reumatologiju, fizikalnu medicinu i rehabilitaciju jedna je od vrhunskih ustanova u područjima svog djelovanja. Budućnost klinike je u daljnjem razvijanju i napretku svih djelatnosti koje provodi, a temelj toga su kvalitetni kadrovi svih profila. U tom smislu izbor djelatnika, povećanje njihovoga broja, a napose onih za kojima je najveća potreba (npr. reumatologa), te edukacija postojećih i novozaposlenih djelatnika jamac je visoke razine kliničkoga rada. Druga je važna sastavnica suvremena oprema, koju Klinika kao vodeća ustanova u Hrvatskoj treba imati, a da bismo mogli pratiti struku i trendove te istovremeno odgovarajuće educirati kako naše djelatnike tako i ostale koji nam dolaze na usavršavanje. Uz navedeno i dostupnost naj-suvremenije farmakološke terapije (uključivo npr. biološke lijekove i ciljane sintetske molekule za liječenje bolesnika s upalnim reumatskim bolestima) povezana je s dodatnim materijalnim izdancima, koje, međutim, treba prihvatiti kao ulaganje, jer je dugoročno i ekonomski opravdano glede budućih direktnih i indirektnih troškova te napose kvalitete života naših bolesnika. Sljedeća važna sastavnica rada jesu prostorni uvjeti, koji su u određenoj mjeri poboljšani, a kapaciteti i prošireni (na lokaciji Vinogradska 29 te novi prostori na lokaciji Ilica 197). U potresima 2020. godine dio zgrada Klinike je zadobio značajna oštećenja, što zahtijeva dodatna ulaganja u njihovu sanaciju. Optimalno rješenje bila bi izgradnja novih prostora Klinike, gdje bi sve djelatnosti bile funkcionalno objedinjene, čime bi se postigla najbolja kvaliteta naših sveukupnih aktivnosti. Informatička i programska podrška također je važna sastavnica optimalnog rada, na čemu treba ustrajati.

Potrebno je poticati i dalje razvijati nastavno/edukativne aktivnosti, kako sudjelovanjem u nastavi visokoškolskih ustanova, prvenstveno fakulteta, tako i u organizaciji i aktivnom sudjelovanju u drugim oblicima edukacije kao što su tečajevi, radionice i slično. Klinika ima značajnu tradiciju i kao znanstvena ustanova te je u tom smislu potrebno nastojati aktivno sudjelovati u

her free, leisure time in order to carry out the tasks that are important for the operation of the University Department.

THE FUTURE OF THE DEPARTMENT

The Department of Rheumatology, Physical and Rehabilitation Medicine is one of the top institutions in its fields of activity. The future of the Department lies in the further development and progress of all the activities it carries out, and the basis of this achievement is the quality personnel of all profiles. In this sense, the selection of employees, the increase in the number of employees (especially those who are needed the most, e.g., rheumatologists), and the education and training of existing and newly employed staff is a guarantee of a high quality of clinical work. Another important component is modern equipment, which is a prerequisite for the operation of our Department as a leading institution in Croatia. This is also important because it enables us to follow the course and trends of our profession and simultaneously and adequately educate both our employees and the employees of other institutions who are trained at our Department. In addition to the aforementioned, it is also important to mention another crucial component: the availability of state-of-the-art pharmacological therapy (including, for example, biologic drugs and targeted synthetic drugs for the treatment of patients with inflammatory rheumatic diseases). This component is associated with additional material costs, but it should be considered an investment which shall bring long-term success in the future, and which is justified from an economic standpoint in terms of future direct and indirect costs, and especially the quality of life of our patients. The next important component of the operation of our Department are the working conditions, which have been improved to a certain extent. In addition to that, the capacities of the Department have also been expanded (with new facilities at our site at Vinogradska 29 and new work premises at our site at Ilica 197). Some of the buildings of the Department were extremely damaged in the 2020 earthquakes, and additional investments need to be made in order for them to be restored. The optimal solution would be the construction of new premises of the Department, at which all of the activities of the Department would be functionally unified, and which would enable us to achieve the best quality of our overall activities. IT and software support is also an important component which contributes to the achievement of optimal work quality which we should always strive for.

It is also necessary to encourage and further develop our teaching/educational activities, both by participating in the teaching activities of institutions of higher education, primarily universities/faculties, and in the organisation and active participation in other forms of

znanstvenim projektima i programima, a napose u onima koji su podržani od relevantnih hrvatskih i inozemnih institucija i međunarodnih organizacija, uključivo i suradnju s drugim ustanovama i institucijama. Rezultati vlastitih istraživanja prezentirat će se na kongresima, simpozijima ili konferencijama, kao i objavljivati radove, preferabilno u časopisima s neovisnom (međunarodnom) recenzijom i u onima što višeg čimbenika odjeka.

Sveukupno, Klinika za reumatologiju, fizikalnu medicinu i rehabilitaciju KBC-a Sestre milosrdnice u Zagrebu dala je izuzetno velik doprinos hrvatskoj reumatologiji i fizikalnoj medicini i rehabilitaciji te vjerujem da će tu, jednu od vodećih uloga, zadržati i nadalje.

U Zagrebu, 1. travnja 2021.

education such as courses, workshops and the like. The Department also has a long tradition as a scientific institution, and in this sense, it is necessary to try to actively participate in scientific projects and programmes, especially those supported by relevant Croatian and foreign institutions and international organisations, which also includes cooperation with other organisations and institutions. The results of research studies conducted by employees of our Department will be presented at congresses, symposia or conferences, their research papers will be published, preferably in journals with independent (international) review and in journals with the highest possible impact factor.

Overall, the Department of Rheumatology, Physical and Rehabilitation Medicine of the Sestre milosrdnice UHC in Zagreb has made an extremely large contribution to the field of rheumatology and physical and rehabilitation medicine in Croatia, and I strongly believe that it will continue to play this leading role in the future.

In Zagreb, 1 April 2021

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