SEVENTIETH ANNIVERSARY OF THE UNIVERSITY DEPARTMENT OF RHEUMATOLOGY, PHYSICAL AND REHABILITATION MEDICINE, SCHOOL OF MEDICINE, UNIVERSITY OF ZAGREB, SESTRE MILOSRDNICE UNIVERSITY HOSPITAL CENTER, ZAGREB

Simeon Grazio

University Department of Rheumatology, Physical and Rehabilitation Medicine, School of Medicine, University of Zagreb, Sestre milosrdnice University Hospital Center, Zagreb, Croatia

Key words: Hospital departments – history – Croatia; Rheumatology – history – Croatia; Physical medicine – history – Croatia

Historical Development of the University Department

As an organizational unit of our Hospital, University Department of Rheumatology, Physical Medicine and Rehabilitation is the oldest organizational unit in Croatia. In our country, responsible for introducing physical therapy in the 1920s was Lujo Thaller, MD, an internist, who started practicing this therapy. Afterwards, on August 1, 1938, the Division of Physical Therapy and Rheumatism was established as part of the University Department of Internal Medicine. Jozo Budak, MD, was appointed head of the Division on March 19, 1940. The Division located in the former Third House (now University Department of Medicine) had 12 beds and office for electrotherapy. It was further expanded to the former Fourth House (now University Department of Ophthalmology) and was given additional 6 beds. At the same time, the outpatient clinic started working. The Division became independent and upgraded to Department of Physical Therapy and Rheumatology, which officially began working on April (or March?) 1941. It was the first independent department in our country for patients with rheumatic diseases. In 1942, Jozo Budak, MD, began to teach the subject of Physical Therapy as an associate professor at School of Medicine, University of Zagreb. After the offices were taken away due to war conditions, the Department started working again on April 15, 1942, and after a brief period of stopping working, it was renamed into Department of Physical Medicine and Rehabilitation on September 1, 1948. Professor Jozo Budak was very innovative and far-sighted in his work. He had a significant role in the organization of the service of phsiatric medicine in former Yugoslavia and was mostly dedicated to the application of active kinesitherapy as the most valuable part of treatment and rehabilitation of patients with diseases of the locomotor system. We may well say that physical and rehabilitation medicine in Croatia and even in the region started to shape through the activities and work of Professor Jozo Budak. As

Correspondence to: Prof. Simeon Grazio, MD, PhD, University Department of Rheumatology, Physical and Rehabilitation Medicine, Sestre milosrdnice University Hospital Center, Vinogradska c. 29, HR-10000 Zagreb, Croatia
E-mail: simeon.grazio@zg.t-com.hr
Received November 3, 2011, accepted December 30, 2011
early as 1940, he developed a device for electrotherapy in the then laboratory and later also a device for sound therapy; 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 experiments on animal models). Under the guidance of Professor Budak, a study of treatment of around 300 patients with rheumatoid arthritis with fresh pituitary glands originating from young animals, with follow up of their therapeutic response using clinical and laboratory parameters was conducted between 1948 and 1954. Although Professor Jozo Budak proposed the establishment of an independent Department of Physical Therapy at the School of Medicine in 1946, it was not carried out. He taught at the School of Medicine as a part-time lecturer at Department of Neurology and Psychiatry until 1958, when an independent department was founded. Professor Budak was one of the founders and the first president of the Section of Rheumatology, Physical Medicine and Balneoclimatology, founded in 1947 as part of the Croatian Medical Association (CMA) in Zagreb. Afterwards, he always had a prominent role in the Section and, among other things, he was its vice president for several terms. In December 1949, the Section organized the First Scientific Meeting, held in the CMA premises, where Professor Jozo Budak was the lecturer on one of the main topics. Professor Jozo Budak was the main initiator of founding the School for Physical Therapy and X-Ray on August 1, 1947, where he was teaching for years. In 1958, Department of Physical Medicine and Rehabilitation became the Republic Department of Physical Medicine and Rehabilitation of Republic of Croatia and its first head was Professor Budak. On March 1, 1959, the Department separated from the former hospital “Dr. Mladen Stojanović” and functioned as an independent institution. Nevertheless, the Department continued working at the same location on the Hospital grounds and collaborated with organizational units of the Hospital. The establishment and functioning of the Department was a major shift in the quality of rehabilitation of patients with special needs. The Department conducted comprehensive rehabilitation, including occupational rehabilitation (more than 30 occupations), began to apply cybernetics in rehabilitation and education of children with difficulties in development and established the first electronic classrooms in the former country. In 1961, enlargement of the Department resulted in establishing the Division of Rheumatic Diseases and Division of Physical Therapy and Rehabilitation of Children, as well as a mounting a prefabricated building for occupational rehabilitation (finishing wood, metal-precise mechanics, etc.). In the 1960s, electromyography (F. Gračanin) was done for the first time in this region and in 1962 the first measurements of I/t curve took place (R. Sabol). Seminars and workshops on the diagnosis of neuromuscular diseases were held. With reorganization of the health care system, from January 1, 1967, the Department became a Hospital unit again, now as Department of Physical Medicine and Rehabilitation, with 64 beds and outpatient service. In the transition period, head of the Department was Mijo Rudar, MD, and from May 1, 1967 Professor Ferdo Licul, MD, PhD. In 1973, the De-
department became University Department of Physical Medicine and Rehabilitation of the School of Dentistry, University of Zagreb; Professor Ferdo Licul, MD, PhD, was head of the Chair and conducted the subject of the same name. He wrote a book “Electrodiagnostics and Electrotherapy”, the first book of this kind in our region. From February 1, 1981 till June 1, 1985, head of the Department was Professor Franjo Gračanin, MD, PhD. He pointed out the activities focused on neurological rehabilitation. During his time, the Clinical Unit for Pain was founded and he is the only specialist in physical medicine and rehabilitation who has written a chapter in the then world’s most prestigious physiatry book, Krusen’s Handbook of Physical and Rehabilitation Medicine. From August 1, 1985, head of the Department was Professor Ivo Jajić, MD, PhD. Now, it grew into University Department of the School of Medicine, University of Zagreb. At first named as University Department of Physical Medicine, Rehabilitation and Rheumatology, it was later renamed as University Department of Rheumatology, Physical Medicine and Rehabilitation. Professor Ivo Jajić directed professional and scientific activities more towards rheumatology and developed extensive publication activities and broad international cooperation. For two terms he was chair-

Fig. 2. Entering records in the University Department Book of Protocols 1941–1958.
man of the Rheumatology Section Board (1977-1981 and 1981-1985) and president of the Croatian Society of Rheumatology (1996-1998). He was the main initiator of the founding and first president of the Croatian Vertebral Society and the Croatian League Against Rheumatism, the only nonprofit organization at the national level, which promotes the importance of rheumatic diseases. He founded the first register of rheumatic diseases in Croatia, which, unfortunately, did not last for long time. Professor Ivo Jajić was honorary member of several European rheumatology societies, full member of the British Society of Rheumatology, and our representative in several international forums and committees. He founded the journal Physical and Rehabilitation Medicine (1984) and was Editor-in-Chief of the journal Rheumatism (1991-1998). In 1999, the University Department became Reference Center for Inflammatory Rheumatic Diseases of the Ministry of Health of Republic of Croatia. After Professor Ivo Jajić’s retirement in 2001, acting head of the University Department was Head Doctor Maja Dubravica, MD, PhD, and since October 7, 2005, the University Department is headed by Professor Simeon Grazio, MD, PhD. The University Department was awarded ISO Certificate 9001:2000, which made us one of the few organizational units in the health system with this prestigious certification. Since January 2011, it is a training center of the European Board for Physical and Rehabilitation Medicine. In the last 15 years, architectural conditions have been improved, primarily comfort of hospitalized patients, physical barriers have been overcome, the Outpatient Clinics for Adults’ and for Children’s Rehabilitation have been extended and renewed. Upon establishment of the Sestre milosrdnice University Hospital Center in 2010, the Physiatric Department of the University Hospital for Traumatology (Draškovićeva 19) and Physiatric Department of the University Hospital for Tumors (Illica 197) have been associated to the University Department.

Department of Physical Medicine and Rehabilitation, now Unit for Rehabilitation of Trauma Patients, was established in 1951, in the early years of the Hospital, later University Hospital of Traumatology. The first chief was Head Doctor Branko Haramustek, MD. Then the Department was guided by Marijan Hlavka, MD; Vladimir Vinceković, MD; and Head Doctor Ružica Nikolić, MD. From 1984 till 2004, it was headed by Head Doctor Dušanka Kostnarović-Živković, MD, and since 2004 to the present by Nina Bival-Fak, MD. Thanks to renewing and rebuilding of the old hospital in 1964, the Department got its

![Fig. 3. Certificate Training Center EBPM.](image-url)
own offices. Since that time, electrotherapy devices and premises for kinesitherapy have been available. Two major renovations of the Department took place in 1987 and from 2004 to 2005, when new equipment and devices for electrotherapy and rehabilitation were purchased, which met current requirements. During the Patriotic War, it had a special role in rehabilitation of the injured.

The Service and now the Clinical Unit of Rehabilitation of Cancer Patients was established within the Institute for Tumors, Zagreb, in 1979. The founder of the Service and at the same time of the Croatian oncology rehabilitation was Ruža Sabol, MD, PhD, Professor of Special Education, Physical Medicine and Rehabilitation. Immediately upon establishment, the concept of the work was focused on medical and psychosocial rehabilitation. The employees of the Service had a very active role in the work of various associations of cancer patients. Professor Ruža Sabol was the main initiator of two non-profit, humanitarian programs related to breast cancer. “Reach to Recovery” is a worldwide program where a previously rehabilitated and professionally educated patient provides psychosocial support to a recently affected patient. The other is Europa Donna Croatia, the association for struggling against breast cancer and promoting the quality of life of treated breast cancer patients. After retirement of Professor Ruža Sabol, she was succeeded by Nada Kraljević, MS, as head of the Department. Over time, the number of employees has increased and new equipment has been purchased, but unfortunately, the facilities are inadequate and moving to new facilities is expectant.

### University Department Today

The University Department of Rheumatology, Physical Medicine and Rehabilitation is the center of excellence in the fields. The University Department structure is as follows: Department of Rheumatology, Physical Medicine and Rehabilitation, which consists of Division of Rheumatic Diseases, Physical Medicine and Rehabilitation of Adults and Division of Rehabilitation of Children, Outpatient Clinic which embraces Physical Therapy Outpatient Clinic for Adults, Rheumatology Outpatient Clinic, Physical Therapy Outpatient Clinic for Children, Clinic for Electrodiagnostics and Diagnostic Ultrasound, and Physical Therapy, as well as Clinical Unit for Rehabilitation of Cancer Patients (site: Ilica 197) and Clinical Unit for Rehabilitation of Trauma Patients (site: Draškovićeva 19). The University Department has 30 beds, i.e. 18 at Division of Rheumatic Diseases, Physical Medicine and Rehabilitation of Adults and 12 at Division of Rehabilitation for Children. The Division for Children follows the “Mother and Child” program for two mothers with children, with the aim of rehabilitation and education. The overall management system is in accordance with EN ISO 9001:2000.

Employees of the University Department: 13 physiatrists (of which 3 subspecialist rheumatologists), 4 residents, 2 speech therapists, 2 special education teachers-rehabilitators, one psychologist, 53 physiotherapists, one occupational therapist, 18 nurses (of which 2 nurses with college education), one secretary and 2 administrators. The Head of the University Department is Professor Simeon Grazio, MD, PhD, while Chief Physiotherapist is Ivan Anzulović, grad. physiotherapist.

A multidisciplinary approach is the basis of diagnosis, treatment and rehabilitation of all hospitalized patients and those from outpatient clinics. There is strong cooperation between staff members (physician, physiotherapist, occupational therapist, speech therapist, special education teacher-rehabilitator, psychologist, nurse, etc.) and patients (or parents). If necessary, other family members are also involved in daily work. Moreover, cooperation has been established amongst all university departments and departments of our University Hospital Center, and if necessary even outside the Hospital. It is important that the patient is an active member of the team, thus advancing the process of treatment and rehabilitation. The patient is becoming increasingly responsible for the outcome. The casuistics includes various diseases and conditions of the locomotor system, such as inflammatory and non-inflammatory rheumatic diseases, pain syndromes, developmental disorders in children, neurological diseases and conditions, posttraumatic conditions, conditions after surgery and other forms of treatment for cancer patients, etc. The Outpatient Clinic consists of general physiatrist office, subspecialist rheumatic office, and outpatient rehabilitation of children. Outpatient rehabilitation of trauma patients and rehabilitation of cancer patients is provided at special clinical
units. Physicians, speech therapists, special education teachers-rehabilitators, physiotherapists and other specialists of our University Department offer consultation at other university departments, e.g., of Internal Medicine, Neurology, Surgery, Neurosurgery, etc., also including intensive care in some of them.

The staff of the Clinic for Rehabilitation of Trauma Patients works closely with surgeons and other physicians at University Hospital of Traumatology (also including intensive care unit). They are well known for rehabilitation of polytraumatized patients, patients with pelvic injuries, burn injuries, spinal injuries, hand injuries, sports injuries, orthopedic rehabilitation and comprehensive rehabilitation of trauma patients. Along with the physiatrist outpatient clinic, some of the specialists work in a special Outpatient Clinic for Osteoporosis.

Clinical Unit for Rehabilitation participates in rehabilitation of cancer patients as part of complex treatment. It covers a broad psychosocial and somato-motor area of human life with the aim of reintegration in the family, social and working environment. In the terminal stage, oncology rehabilitation is an essential part of palliative care. Hospitalization of adults is directed to applying distinguished diagnostic procedures and therapy primarily in patients with rheumatic diseases. Children are hospitalized for rehabilitation from neurological damage. Pediatric Department is a unique organizational unit in Croatia, which is part of the University Department and University Hospital Center, providing high-quality diagnostic procedures and rehabilitation. The University Department is Reference Center for Spondyloarthropathies of the Ministry of Health and Social Welfare of Republic of Croatia. Special attention is focused on early diagnosis and intervention to achieve the best possible outcomes. Two diagnostic procedures, i.e. power-Doppler ultrasonography and electromyoneurography, are highly valuable in our daily work. In addition to standard diagnostic applications primarily in changes of soft tissues (extra-articular rheumatism), the former method allows for early diagnosis of joint changes, especially in inflammatory rheumatic diseases, while the latter is used to diagnose various diseases and defects of neural and muscular structures. Disease activity, functional disorder and therapeutic response are followed up by using various questionnaires (BASDAI, BAS, BASM, DAS, HAQ, WOMAC, etc.), which greatly improve access to treatment, prognosis and outcome. A special contribution of the University Department is validation of the Croatian version of the questionnaire specific for ankylosing spondylitis (BASF, BADSAi) as a typical representative of spondyloarthropathies.

Education is an inevitable part of everyday work that is carried out primarily by personal contact with patients (and parents), but also through printed and electronic materials, and in lectures and discussions involving the employees of the University Department. The treatment is now reinforced by all known and available medications. Progress has been made particularly in the treatment of most important inflammatory rheumatic diseases using so-called biologic drugs, which provides significantly better results, including improved quality of life and functional status in patients with the most severe forms of rheumatoid arthritis and spondyloarthropathies. Thereby we keep up with other top institutions in the country and abroad. The advantage of the University Department is the possibility of complex treatment that includes medication along with physical therapy as functional treatment. The University Department provides current and individually adjusted programs of therapeutic exercise (kinesitherapy), among them treatments with various forms of physical therapy (thermotherapy, cryotherapy, electrotherapy, therapeutic ultrasound, magnet therapy, light therapy, extracorporeal shockwave therapy - ESWT, etc.). Work (occupational) therapy, psychotherapy, psychosocial support, prescribing and use of rehabilitative training devices, and in some cases supportive and complementary therapies (music therapy, spiritual therapy, dance therapy, etc.) are part of the intervention carried out primarily in chronic diseases and conditions.

Besides regular weekly ward rounds and clinical-radiological meetings (in collaboration with radiologists specialized in the locomotor system), the University Department regularly organizes lectures for physicians as well as for physiotherapists. Computer resources and local networks enable proper and prompt clinical work. Three employees of the University Department have the title of Head Doctor (Simeon Grazio, Zrinka Jajić and Tanja Nikolić). Professor Simeon Grazio has acquired the Fellow of the European Board of Physical Medicine and Rehabilitation title.
Employees of the University Department are members of the following professional societies: Croatian Society of Rheumatology, Croatian Society of Physical and Rehabilitation Medicine, Croatian Vertebral Society, Croatian Society of Palliative Medicine, Croatian Society of Sports Medicine, Croatian Society of Neuromuscular Diseases and Electrodiagnostic Medicine, Croatian Society of Resuscitation, Croatian Society of Special Education, Croatian Society of Behavioral and Cognitive Therapies, Croatian Olympic Committee (Sports Section), as well as of international associations and organizations (e.g., EULAR, ESPRM, ISPO). Some of the University Department staff members performed or are still performing duties in professional societies. Thus, for example, Professor Simeon Grazio is member of the Managing Board of the Croatian Society of Rheumatology, Croatian Society of Physical and Rehabilitation Medicine, and the second vice president of the Croatian Vertebral Society. During the 2008-2011 period, he was representative of the Croatian Society of Rheumatology in the Scientific Committee on Investigative Rheumatology (ESCR) of the European League Against Rheumatism (EULAR), while since 2011 he is member of the Standing Committee for Epidemiology and Health Services Research and EULAR. The University Department employees have been awarded diplomas of professional societies, institutions and non-profit organizations.

Our University Department has the leading role in scientific research in the field of rheumatology and physical medicine. Thus, for example, in the period from 2008 until 2010 the University Department conducted or completed (in the phase of analysis and publication of results) 17 non-profit research projects. Five of them were projects supported by the Ministry of Science and Sports of Republic of Croatia. Professor Simeon Grazio is the principle investigator in one of them. The title of research project is Psoriatic Arthritis – Epidemiology and Risk Factors of Progression. Employees of the University Department continuously participate in multicenter international clinical studies, enabling them to continue to learn and gain experience in new treatment options, particularly in inflammatory, anti-inflammatory rheumatic diseases, osteoporosis, and trauma.

There are four employees with PhD degree (Simeon Grazio, Zrinka Jajić, Iva Popović and Valentina Matijević-Mikelić) and three with MS degree (Zdenka Đimić, Fran Grubišić and Nada Kraljević). Professional activities resulted in a total of 259 scientific papers by current employees of the University Department, of which 68 in journals cited in prestigious databases (CC and SCI-Expanded). Our employees participated with 359 papers at national and international conferences. They published more than 80 books and book chapters in the field of rheumatology, physical medicine and rehabilitation as authors and co-authors. They were members of organizing committees, and took part as invited lecturers, keynote lecturers and moderators of sections at numerous scientific and professional meetings and conferences.

Our University Department has a long tradition as an institution of education in which a significant part of residency in physical medicine and rehabilitation, sub-residency in rheumatology, and a minor part within compulsory service in other specialties (e.g., orthopedics, family medicine, occupational medicine and sports medicine) is conducted. During residency at our University Department, residents are trained in theoretical and practical knowledge and skills. In this sense, their progress is monitored through the expert system tests and they are committed to attend meetings at the University Department and fluently present certain topics. The University Department is a place where the main exams in physical medicine and rehabilitation and in rheumatology are held.

The University Department provides a curriculum for several high education institutions such as undergraduate and graduate School of Medicine, and undergraduate studies at the Faculty of Kinesiology, Faculty of Education and Rehabilitation, Health College (teaching unit), Faculty of Humanities and Social Sciences – Department of Linguistics, and continuous cooperation with the School for Nurses in Zagreb. Some of the University Department physicians are authors or co-authors of the books approved by the Faculty and University as curricular textbooks. Besides teaching, there are courses organized primarily for physicians, such as the first category course of the Chair of Physical Medicine and General Rehabilitation. One of them is Soft Tissue Rheumatism and Related Conditions – the Latest Novelties in Diagnosis and Treatment, held in 2006, 2007, 2009 and 2011. In 2011, the University Department became a train-
Seventieth anniversary of the University Department of Rheumatology, Physical and Rehabilitation Medicine

The University Department was organizer of several conferences in the past seven years and also took part in celebrating the Bone and Joint Decade, proclaimed by the World Health Organization. Thus, in the past several years and often in collaboration with other University Departments of the University Hospital Center, our University Department organized symposia on the occasion of the World Spine Day, as follows: Low Back Pain (2004), Low Back Pain – Biopsychosocial Aspects (2005), Diagnosis and Treatment of Herniated Lumbar Disk (2006), Prognosis and Outcome of Low Back Pain: Evidence-Based Medicine (2007), Neck Pain: From Causes to Rehabilitation (2008), Thoracic Spine – A Neglected Part of the Spine (2009), and Novelties and Perspectives in Vertebrology (2010). The most recent symposium, Guidelines for the Diagnosis, Conservative and Invasive/Surgical Treatment of Patients with Low Back Pain (2011), is the first symposium of the kind in Croatia, which significantly helps physicians in practical approach, and professional and regulatory bodies on the issues of back pain. The University Department employees were members of the organizing and scientific committees of local congresses, and Professor Simeon Grazio, MD PhD, was member of the Scientific Committee and section co-leader at the Mediterranean Congress of Rheumatology in 2009 and 2011, as well as co-editor of the 2009 Congress proceedings (published in the journal Clinical and Experimental Rheumatology).

The University Department is the seat of the journal Physical Medicine and Rehabilitation, a professional journal of the Croatian Society of Physical and Rehabilitation Medicine, Croatian Medical Association. During the 2005-2008 period, its Editor-in-Chief was Tomislav Nemčić, MD, and since 2009 it is Professor Simeon Grazio. Fran Grubišić, MD, MS, is the journal secretary. Professor Simeon Grazio was editor of Rheumatism (1997-1998) and is member of the Editorial Board of the same journal (since 1999). Furthermore, he is member of the Editorial Board of Acta Clinica Croatica (since 2005). The University Department employees have been active as reviewers in Croatian and international medical journals.

The University Department is closely affiliated with the Croatian League Against Rheumatism, the only organization at the national level that brings together patients with rheumatic diseases as well as professionals dealing with the problem. Since its foundation in 1992, the League’s headquarters is located at the University Department. The League has more than 5000 members in 13 county branches, and conducts numerous activities, including organization of popular lectures and discussions (in the last 7 years involved in celebrating the Decade of Bones and Joints). Our employees were glad to take active part in these activities. The League has published 27 manuals for patients (in 20 of them, authors or co-authors are members of the University Department). The League has also published two books (co-authors are also employees of the University Department), and regularly publishes a newsletter entitled Reuma twice a year. The League is member of the Association of Patients at EULAR (PARE), Ankylosing Spondylitis International Foundation (ASIF) and International Osteoporosis Foundation (IOF), and one of the founders of AGORA, a platform for organizations of persons with rheumatic diseases in southern Europe (as part of PARE). In the last few years, international actions of the League have been reinforced, with the prominent role of Fran Grubišić, MD, MS. The League representatives regularly participate in the EULAR autumn meeting. In May 2011, the League organized an international project, the exhibition Working Wonders Exhibition, held under the auspices of Professor Ivo Josipović, Croatian President. In October 2009, the Croatian League Against Rheumatism was the main initiator of thematic meetings of the Board of Health of the Croatian Parliament dedicated to musculoskeletal disorders. At the same time, the European Charter was presented and accepted on the work of patients with musculoskeletal diseases in Croatia. Professor Simeon Grazio is president of the League and Editor-in-Chief of its journal Reuma. Fran Grubišić, MD, MS, is secretary of the League, and several employees of the University Department are members of the Managing Board of the League.

The employees of the Clinical Unit for Rehabilitation of Cancer Patients are actively involved in the Society of Women Treated for Breast Cancer, Society of Laryngectomized Patients, Society of Patients with Colo-Ileo-Urostoma, etc., as well as in two exceptional projects related to breast cancer, i.e. Reach
to Recovery, a non-medical rehabilitation program whereby rehabilitated and professionally educated patients provide psychosocial support to recently affected patients; and Croatian Europa Donna of Republic of Croatia, which gathers medical professionals and patients with a request to create a unified European strategy to prevent and treat breast cancer, in which palliative care has the inevitable role of rehabilitation. They participate in creating a national strategy correspondent to European criteria, called Declaration of the European Parliament from March 2010, with the aim of reducing mortality and improving quality of life, both for patients and their family members. Since 2005, president of Europa Donna Croatia is Nada Kraljević, MS. The University Department employees are active in the work of some other organizations such as the Croatian Dyslexia Society and Stroke Prevention Society.