

**REVIEW**



# A century of pulmonology in Serbia

✉ Mihailo I Stjepanović <sup>1, 2</sup>

<sup>1</sup>University of Belgrade, Faculty of Medicine, Belgrade, Serbia

<sup>2</sup>Clinic for Pulmonology, University Clinical centre of Serbia

**Received:** 12 March 2023

**Revised:** 29 April 2023

**Accepted:** 03 May 2023



Check for updates

**Funding information:**

Presented article is not a part of any research project.

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**Competing interests:**

The authors have declared that no competing interests exist

✉ **Correspondence to:**

Mihailo Stjepanović  
Clinic for Pulmonology, University Clinical Centre of Serbia  
26., Koste Todorovića Str., Belgrade, Serbia  
Tel: +38162707797  
E-mail: mihailostjepanovic@gmail.com

## Summary

The year 2022 marked 100 years of modern Serbian pulmonology and 90 years of the Clinic of Pulmonology, University Clinical Center of Serbia. This paper presents a concise history of the development of the Clinic, which includes the establishment of the clinic, its organizational and educational development, as well as its most prominent directors who made it all possible. Also, the current activities at the clinic and the current state of the employees are described. The aim of the paper is to show the development of the Clinic for Pulmonology, and thus to acknowledge its predecessors and contemporaries.

**Keywords:** pulmonology, history, Serbia

Professor Aleksandar Radosavljević is considered the founder of the Clinic for Pulmonology. Dr Radosavljević was born in 1877 in Budapest, and he finished primary and secondary school in Belgrade and Sremski Karlovci. He completed his medical studies in Vienna, as a student of Nobel laureate Julius Wagner. After graduating from Medical school, with the money he received from his uncle for graduation, doctor Radosavljević bought his first microscope, and in the analysis of his own sputum, he discovered *M.tuberculosis*. Therefore, he decided to further specialize in the field of internal medicine in Vienna and Graz, where he was also treated for his tuberculosis. The doctor spent the First World War as a physician in the Supreme Command of the Serbian Army, and then as the personal physician of Duke Radomir Putnik. During the withdrawal of the Serbian army through Albania and his stay in Corfu, Professor Radosavljević collaborated with the doctors of the Italian and French armies, and received recognition from the states of Italy and France. Upon the end of the First World War, on February 15, 1922 Dr Aleksandar Radosavljević was elected as an associate professor at the Faculty of Medicine in Belgrade, in the field of internal medicine, with a special focus on “diseases of the respiratory tract”. This day is considered the beginning of modern Serbian pulmonology. The following year, the III internal clinic was founded, headed by Professor Radosavljević, with a total of 30 beds, a laboratory and an X-ray room. Initially, the main pulmonary pathology was tuberculosis of the lungs, and due to the increasing number of patients, in 1926 the clinic was moved to the building of the General State Hospital, in the I and II internal departments. Simultaneously with the development of the clinic, Professor Radosavljević, together with his colleagues, participated in the founding of the Serbian Physiological Society as part of the Serbian Medical Society (1928) and the Yugoslav Physiological Society (1933), as well as in writing the paper “Lung Diseases”. In 1932, the clinic moved to a newly built building where it is still located. In the new building, the clinic was renamed into Hospital for Chest Patients and was a part of the General State Hospital in Belgrade, and as such, it had 145 wards distributed in 3 departments: chest internal, chest surgical and chest children’s department. The first manager of this hospital was Dr Ljubiša Ilić, under whose leadership the hospital became the best equipped hospital for the treatment of tuberculosis in the country. Also, in the same period, the first thoracic surgical interventions in Serbia were performed in the hospital. In 1947, the hospital merged with the Department of phthysiology of the III internal clinic and a large anti-tuberculosis center was founded and named the Phthysiology Clinic, headed by Professor Jevrem Nedeljković. Professor Nedeljković, student and assistant of Professor Radosavljević, formed the first specialized laboratory for the tuberculosis bacillus in Belgrade and introduced new

methods of treating tuberculosis using artificial pneumothorax. With successful implementation of systematic vaccination and radiography, on February 9, 1952 a decree was passed on the formation of the Institute for Tuberculosis of the National Republic of Serbia, headed by Assistant Professor Milić Grujić. Under the leadership of assistant professor Grujić, the institute was adapted, the number of beds increased from 180 to 305, the number of employees rose to 180, of which 33 were doctors. The institute also got a library, and new diagnostic and therapeutic methods began to be applied, and new departments were opened. With the further development of the Institute, in 1957 the Institute had one professor, four assistant professors, five teaching assistants, seven specialist phthisiologists, eighteen residents and one resident in bacteriology; due to further training needs, professional literature was obtained from other parts of Yugoslavia, France, England, the United States of America, Switzerland, Sweden, Germany, Italy, the Soviet Union and China. The education of doctors in the field of phthysiology, as well as nurses, X-ray technicians, laboratory assistants and medical assistants for the needs of the BSG service was also carried out. In addition to the education of staff and colleagues from other institutions, the number of beds in the Institute increased to 320, and new outpatient clinics, operating rooms, X-ray, spirometry, bronchoscopy and other offices were opened. Special importance was given to children suffering from tuberculosis, so visits by writers and singers were organized, and a school for children with two full-time teachers was open in 1955. In view of successful suppression of tuberculosis and the increase in the incidence and prevalence of other lung pathologies, in 1971 the Institute became the Institute for Tuberculosis and Lung Diseases of the Socialist Republic of Serbia, and in 1975 the Executive Council appointed Professor Manojlo Budisavljević as the Director of the Institute. In 1976, the Institute changed its name to the Institute for Lung Diseases and Tuberculosis of the SRS, and at that time it had 520 beds, 405 employees, of which 43 were doctors. In addition to clinical and surgical departments, the Institute also had an epidemiological and pathoanatomical service, as well as a specialized laboratory. Because of all the contributions made by the Institute, in 1977 this institution was awarded the Order of Merit for the People with a gold star by the then President of the Republic, Josip Broz Tito. In addition to the improvement of the Institute, Professor Budisavljević also participated in the establishment of the Clinical Center of the Faculty of Medicine in Belgrade in 1982, and the Institute itself became one of the 26 basic organizations of joint work. Due to development in the field of diagnostics, in 1987 the polyclinic of the Clinical Center was opened, where part of the Institute’s diagnostics also moved. The next significant step in the Institute’s development is the annexation of the Clinic for Pulmonology,



**Image 1.** Aleksandar Radosavljević (taken from SANU)

which was developed as a part of the Internal B Clinic, and professor Milivoje Stevanović was appointed as its director. In systematization, a significant shift was made by uniting the internist and pneumophthisiology services into a single pulmonology service; the unification lead to the formation of a unique teaching base of pulmonology

at the Department of Internal Medicine. Reconstruction of the Institute building was also carried out, an intensive pulmonary care unit, a day hospital for chemotherapy for patients with lung cancer and a service for physical therapy and rehabilitation of lung patients were established. In the further development of the Institute, in 2010, the Institute for Lung Diseases and Tuberculosis was divided into two special organizational units: the Clinic for Pulmonology and the Clinic for Thoracic Surgery. During the SARS CoV-2 pandemic, the Clinic for Pulmonology actively participated in the treatment of patients, both at the clinic itself and as support to other centers in Serbia. Due to its contribution to the development of the pulmonology school in Serbia and the centenary of its existence, in February 2022, the Clinic for Pulmonology was awarded the Order of Merit of the third degree, and the Director of the Clinic, assistant Mihailo Stjepanović, received a Gold Medal for outstanding merits and contribution to the implementation of activities to prevent the spread of the disease COVID-19.

Today, the Clinic for Pulmonology is a reference institution for tuberculosis and it participates in the creation and improvement of guidelines for prevention, diagnosis, treatment and rehabilitation in the field of tuberculosis. The Clinic itself consists of an inpatient and a polyclinic-diagnostic center and is a center for carrying out scientific research and teaching activities. As part of its work, the Clinic cooperates with other pulmonology centers in the country and the world. The institution consists of the polyclinic service, the department for the reception and treatment of urgent pulmonary conditions, specialist



**Image 2.** The staff of the Clinic for Pulmonology of the University Clinical Center of Serbia on the occasion of the 90th anniversary of the Clinic

clinics, the department for functional lung diagnostics, the department for bronchoscopy and invasive diagnostics (which also includes an outpatient clinic for interventional pulmonology), the department for cardiac monitoring of pulmonary patients, day hospitals for malignant lung and pleural diseases, eight inpatient wards, units for intensive pulmonary treatment and units for semi-intensive pulmonary care. As part of the work, cabinets for mechanical ventilation and other respiratory support, the cabinet for prevention and smoking cessation, the echosonography cabinet, the cabinet for scientific research work and the outpatient clinic for the diagnosis of sleep breathing disorders were created. Further work with children led to the development of highly specialized clinics that deal with pulmonary hypertension, severe asthma, interstitial lung diseases and post-COVID clinic. Scientific research works concern theoretical and practical teaching as part of propaedeutics and internal medicine at integrated academic studies, as well as teaching as part of specialization in internal medicine and general medicine, and subspecialty teaching in pulmonology; prepa-

ration of doctoral theses was also carried out at the clinic. Clinic teachers are holders of scientific research projects, the results of which have been published in international journals; the teaching staff of the clinic participated in writing numerous chapters in several textbooks and monographs, the last of which, "Selected chapters in pulmonology" was approved as a textbook for postgraduate teaching. One century of Serbian pulmonology was also marked by a large pulmonology congress lasting 3 days, with over 70 lecturers from the country and abroad and with 350 participants. Today, the Clinic for Pulmonology is the largest and most modern pulmonary institution in Serbia and a source of pride for doctors and patients. 66 doctors participate in the work of the clinic, of which 42 are specialist doctors and 24 are residents. 14 doctors participate in classes at the medical faculty, of which 3 are full professors, one associate professor, 3 assistant professors and 7 teaching assistants. We are thankful to our teachers and to our colleagues for everything they have done for the development of pulmonology.

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## JEDAN VEK PULMOLOŠKE ŠKOLE U SRBIJI

Mihailo I Stjepanović<sup>1,2</sup>

### Sažetak

Godine 2022. obeleženo je 100 godina moderne srpske pulmologije i 90 godina Klinike za pulmologiju Univerzitetskog kliničkog centra Srbije. Ovaj rad predstavlja sažet istorijat razvoja Klinike, u kojem je obuhvaćeno osnivanje klinike, organizacioni i edukativni razvoj, kao

i najznamenitiji direktori koji su to omogućili. Takođe, opisane su i aktuelne delatnosti klinike i trenutno stanje zaposlenih. Cilj rada je prikazati razvoj Klinike za pulmologiju, i time odati priznanje prethodnicama i savremenima.

**Ključne reči:** pulmologija, Srbija, istorijat

**Primljen:** 12.03.2023. | **Revizija:** 29.04.2023. | **Objavljen:** 03.05. 2023

**Medicinska istraživanja 2022; 56(2):39-42**