



Fund “Nauka” Project № 19020 Resume – Competition-Based Session 2019:

“Electronic register of stroke, diabetes and diabetic retinopathy for the study of the epidemiology of diseases and the effectiveness of their management”

Project leader: Prof. Kristina Stanimirova Bliznakova, PhD

The main research aim of the project is to develop, test and implement a software system for registering patients diagnosed with stroke, diabetes and diabetic retinopathy (DR) for studying the incidence, prevalence, mortality, case fatality and the effectiveness of the management of the disease in the city of Varna. In order to achieve that aim the project team has set the following specific tasks:

- ❖ Studying the main methods and approaches for data quality control in stroke, diabetes and diabetic retinopathy populational registers in Europe and the world.
- ❖ Development of work protocols and main variables to be registered in the three disease registers.
- ❖ Development, testing and implementing of a software system allowing registration and reliable and protected storage of anonymous patient information.
- ❖ Data entry in the three registers – under continuous and permanent data quality control;
- ❖ Analysis of stroke incidence, diabetes and diabetic retinopathy prevalence and the effectiveness of the health care system in management and prevention of those diseases.
- ❖ Results dissemination.

Expected results: The first and only stroke, diabetes and diabetic retinopathy registers will be implemented in the country. They will provide prerequisites for conducting fundamental studies on the epidemiology of the diseases, development of computer applications for their prevention, initiating a sustainable screening program for diabetic retinopathy, increasing the access to preventive and treatment services and the effectiveness of the management of those diseases.

Achieved results:

The activities of this project led to the development, validation and operation of a secure software system for registering patients with stroke, diabetes mellitus (DM) and diabetic retinopathy (DR) to study morbidity, mortality, lethality and health system effectiveness in management of diseases. The first registry in Bulgaria with databases

for stroke, diabetes and diabetic retinopathy was created. The pilot study resulted in 4947 stroke patient records, of which 3668 were uniquely identified; 1815 records of patients with diabetes, of which 1545 with a unique identifier, and of these 370 with DR. An interdisciplinary research network was built for the implementation of the system. The implementation of the project ensured the career growth of the doctoral students in the project, with three successfully defending their doctoral studies. A teacher became a professor. Five of the published articles are visible in the Scopus database. The project contributed to building expertise and a high-quality system for long-term monitoring of the population in relation to chronic diseases – stroke, DM and DR.