

## **Mgr Olga Patryka**

### **„Optimizing the costs and organization of healthcare for the elderly – analysis of differences between women and men”**

#### **Streszczenie w języku angielskim**

The dissertation examines the impact of sex on the use of public health care and on the structure of service costs in the population aged over 60 years in Poland. The starting point is population ageing, the growing burden on the health care system, and the differences between women and men documented in the literature in terms of health behaviours, disease profiles and mortality. In this context, sex is treated as a variable that differentiates both health needs and the way and intensity of using health system resources.

The main aim of the study was to investigate how women and men in this age group use services at the three organisational levels of health care and how the related costs for the public payer are distributed. An additional aim was to assess the potential of routinely collected data of the National Health Fund (NHF) to identify problem areas in care for older people and to formulate system-level recommendations.

The research material consisted of anonymised NHF data covering all services provided to persons aged  $\geq 60$  years in 2012-2016, a total of 479,464,158 records assigned to 7,389,453 patients. From this population, a representative sample of 30,000 individuals was drawn, preserving the age and sex structure, and detailed analyses were performed on this sample. Descriptive analyses were used, along with regression models for count data (Poisson and negative binomial models, with results presented as incidence rate ratios, IRR), two-part cost models, analysis of patient pathways between the levels of primary health care, ambulatory specialist care and hospital care, and the identification of high-cost patients (the top 10% of annual hospitalisation costs).

The results indicate that women use services more often at all levels of care, and more frequently create complex pathways of contacts with the system. Men use services approximately 9-10% less often than women. In ambulatory care, men have a lower likelihood of using services and slightly lower annual costs per user than women. In hospital care, their odds of hospitalization and costs are about 30% higher. The main burden on the system is generated by diagnoses related to arterial hypertension, degenerative joint diseases, eye diseases, type 2 diabetes, heart failure and COPD, with sex differences in the frequency of service use. The analysis of high-cost patients showed that men are more likely than women to fall into the top 10% of hospital treatment costs, also outside the main diagnostic groups.

The conclusions highlight the need to take sex into account in the planning and evaluation of the functioning of the health care system, including in the reporting of costs, health outcomes and access to services. A number of recommendations are also proposed. These include strengthening the role of primary health care as a coordinator of care for older people, developing geriatric teams and community services. Also standardising care pathways for selected multimorbidity profiles, identifying and actively managing high-cost patients, and gradually moving towards financing models based on outcomes.

The study shows that NHF administrative data can be used for modelling of service use and costs in an ageing population, taking into account sex differences, providing a basis for a more cost-effective and clinically effective organisation of care for older people.