

The main objective of the planned project is to gain information and knowledge from databases covering many parameters and a large population ("BIG DATA") in patients with chronic obstructive pulmonary disease (COPD), aged 65 and over (65+). We will examine the quality of the data and we will reveal the determinants of exacerbations of the disease combined with medical data and regarding medical data such as the basket of guaranteed services from National Health Fund (NFZ) (in particular the cost) on registered by the NFZ. and demographic data from the Lodz region. Additional objective is to examine the educational method for better quality of life of COPD patients.

COPD is a major public health problem and one of the most common chronic diseases. It is estimated that the disease occurs in 8 - 10% of Europeans 30 years old and older. In Poland, approximately 10% of the population over 40 years old meet characteristics of COPD. World Health Organization (WHO) predicts that COPD in 2030 become the fourth leading cause of death in the worldwide. Despite the publication of practical guidelines for prevention and treatment, and known risk factors for this disease we observe more incidence of this disease, as a civilization condition. In addition, within 20 years, there is an increase in incidence which will continue to growing people aged 65 years and older. In the years 1989-2013 the number of older people has increased, its share in the total population has grown from 10% in 1989 to 14.7% in 2013. The incidence of the disease as a civilization disease of stimulates to more extended analysis of the factors that it causes in the Lodz region.

Risk factors for COPD are well known, but there are no studies of risk factors for this disease in patients aged 65+, in conjunction with guaranteed services provided to these patients and the cost of their treatment. Due to the growing number of patients 65+ intensive research should be carried out into methods, which can enhance their quality of life.

Research hypotheses: An amount of resources regarding specialist guaranteed services and their distribution reduce the frequency of exacerbations. The higher incidence of co-morbidities relates to patients' unwanted outcomes quality of patients' life and exacerbations. Applying of the proposed methods of improvement, especially educational interventions, will have an impact on improving the quality of life of patients with COPD 65 aged years and over in particular exacerbations.

Large data sets "BIG DATA" with information about patients with COPD 65+ in the Lodz region used for the project will come from the databases National Health Fund (NFZ) and Social Insurance Institution (ZUS), the local central offices and censuses. In the first stage, the data will be checked for data quality, data cleaning processes. Data imputation methods will be used. Next, use descriptive statistics and summary data set will allow to formulate the basic conclusions and generalizations about the population. The next step is searched for correlations and associations between variables, using exploring data methods (data mining methods). Logistic regression models will be applied as a statistical tool. The next step will be the formation of recommendations / educational interventions that can have an impact on the improvement of the standard of life of these patients. In addition, it will be checked whether in fact these results may improve the quality of life of patients with COPD 65+, by use of educational intervention. Data on the outcome of the intervention will be collected by means of questionnaires sent to patients.

In data bases there are a lot of information, that can help improve the quality of patients' life. Finding a new associations will contribute to the understanding and explore this knowledge. This area is not yet sufficiently investigated, and no one in the Lodz region not studied by this method 65+ patients with COPD, in particular with exacerbations. The proposed project will also enable the compilation of demographic data of patients with data from other databases and extract this knowledge for the Lodz region, in relation to the population of patients with COPD 65+. It will allow to discover / explore not recognized so far the relationships between doctors' recommendations, patients' visits, the guaranteed services provided. The proposed project will also provide information about the quality of the data in large databases in the Lodz region of population of patients with COPD 65+, patient information and help to find the factors that influence the disease in the elderly population, and also enable the formulation of recommendations and methods for improving the quality of patients' life. Access to all relevant data will facilitate the right decisions and can help improve the level of patient satisfaction and efficiency of implementation, which in turn can help improve the results of therapy. The results of the project will be collected and published, we will develop materials that will be available for non scientists, such as recommendations on how to improve the patient quality of life with COPD 65+ in the Lodz region. The use of the proposed methodology will allow to examine patients also from other Polish regions.