

3.1 General self-assessment of the social benefit of R&D&I in the fields of research at the evaluated unit, and of the evaluated unit as a whole – details FHSS

Goals and social contribution of R&D&I in health fields

The research teams of the Faculty of Health and Social Sciences (FHSS), in accordance with the Luxembourg Declaration on Patient Safety, are focused on identifying risk processes/activities in the field of nursing care and the development and evaluation of preventions that can be implemented into the operation of medical facilities. In addition, FHSS examines the degree and rate at which preventions are implemented relative organizational structure, as well as methods of risk management, e.g., the existence of a risk manager and integration of preventions into practice. Ensuring safety in medical facilities, eliminating and preventing risk factors associated with the provision of healthcare leads to a reduction in costs, and an increase in patient satisfaction. Based on the results of research, the research team prepared a monograph identifying and describing risk areas related to nursing care as well as describing preventive measures and suggesting practical solutions for enhancing safe nursing. At the same time, the faculty designed a tool to monitor and improve the quality of care at the national level, which should significantly improve the level of patient and staff safety in healthcare facilities; we see a significant social contribution resulting from this research being implemented.

Continuing research will also contribute to better nursing care by analyzing factors linked to the risk of falls and examining how nurses and pharmacists can work to minimize this risk. Falls of hospitalized patients are unfortunate and potentially dangerous events that can subsequently complicate the patient's treatment and prolong the period of hospitalization. The falls are not only caused by age and frailty syndrome but are often linked to polypharmacotherapy.

In order to prevent falls, it is important to identify at-risk patients immediately after admission to a medical institution. Next, it is important to define specific preventive measures that are effectively communicated with the nursing staff. The research at FHSS can impact this problem through the development of an electronic database "Monitoring of the risk factors of falls and their analysis." This database allows local hospitals to monitor, analyze, and evaluate the actual causes of falls with a focus on falls linked to pharmacotherapy. An added value of the database is its interactivity – it facilitates electronic communication between doctors and the clinical pharmacists, who, on the basis of relevant

data, assess the risk of a particular pharmacotherapy relative to a patient fall. This interactivity will also make it possible to find a corrective solution immediately after the event.

On a wider level, the database will allow for the comparison of results among the healthcare providers, including the prescription rate of implicated medicines and the ability to draft action plans for preventing patient falls. Based on the results of the research, a certified course for postgraduate nurse education was proposed, the goal of which is to provide nurses with relevant pharmacology training that can be implemented into their everyday practice. The project will significantly improve the quality of care, including patient safety, which is currently a key parameter for assessing the overall quality of healthcare provided.

In other areas of applied research, teams are working on methods for promoting healthy lifestyles in both primary and secondary prevention of cardiovascular diseases. Data suggests that, in practice, the level of education and compliance is highly underestimated in terms of influenceable factors. While there is a very dense network of cardiac centers in the Czech Republic, there are no nurse-led educational intervention programs for the subsequent care of those at increased risk of heart disease and those being treated for cardiovascular disease, despite the fact that nurses have great potential to provide education and information regarding preventive cardiology.

To address this issue, researchers examined the educational role of the nurse in preventive cardiology relative to preventive interventions for life-style related, and therefore modifiable, risk factors for cardiovascular disease. The research was in line with the European Guidelines on cardiovascular disease prevention in clinical practice published by the European Society of Cardiology. We see a significant social contribution for this research related to the creation and verification of the effectiveness of cardiology interventions in primary and secondary care, as well as the creation of short-term and long-term methods of education for implementing these interventions.

FHSS has proposed the creation of software to assist in the self-management of modifiable risk factors for cardiovascular disease that fits within the competences of nurses. The short-term and long-term educational programs would be used in preventive care centers and in professional outpatient clinics. Based on the results, a certified course was also created to strengthen the educational role of nurses in preventive cardiology. The results of the research were presented both as monograph and in scientific and professional journals.

FHSS research teams also focused on preventive activities in another research project, in which they addressed the issues presented in "Health 21" and "White Paper – Strategy for Europe on health problems related to nutrition, overweight, and obesity." These documents stressed that one of the

priorities of a democratic state's health policy is to reduce the social disparities in individual health and that the European Union expects individual states to promote health among groups of people living at lower socio-economic levels, having lower levels of education, and having lifestyles that put their health at risk. These factors can lead to social exclusion, which can lead to increased alcohol consumption, consumption of unhealthy cheap meals, and other sociopathological phenomena. An example of a minority group threatened by social exclusion is the Roma minority. Studies have focused on determining the prevalence of obesity and overweight in the Roma population. Based on project results, a strategy was developed for preventive action directed at eating habits among the Roma as well as a preventive educational program providing educational information on healthy eating. The educational program is used by nurses and social workers when working with the Roma community. In the context of individualized and targeted prevention, other lifestyle changes can also be achieved, which will lead to an increase in the quality of life for members of the Roma minority.

Research projects that focus on national and religious minorities living in the Czech Republic have an important place in the field of nursing research at FHSS. Research teams recognize that the number of foreigners in the Czech Republic is growing, which increases contact with individuals from different cultures during the provision of health care. It is important to understand that ethnicity and spiritual and religious beliefs can affect access to healthcare and disease treatment. In order for a nurse to provide culturally competent care, they must have a theoretical understanding of different cultures and behaviors during times of health as well as illness. Based on the results of several studies, the research team has compiled comprehensive data on national and religious minorities living in the Czech Republic along with the potential impact on nursing care; these reports are contained in several monographs. For individual minorities, FHSS developed nursing care standards and specialized communication cards that can be used in medical facilities when working with individuals from different cultures.

As part of an applied research project called The Effect of Polluted Air on Children's Morbidity, the research team verified that changes in gene expression in the metabolic pathway affecting immunity and brain development, detected in newborns, affect their morbidity and psychological development. The project was in response to a problem observed in the industrial parts of Northern Moravia, namely that the number of respiratory diseases was increasing in preschool children, along with slower development of the immune system. The societal benefit of the project is derived from a more thorough characterization of the impact of airborne carcinogenic/genotoxic PAHs on the development of children and how changes in the overall gene expression affect the process. The results are socially very significant because they provide powerful new insights that can be used for prevention.

The aim of the health and social science project entitled "Influence of modern non-pharmacological methods on the treatment of cardiovascular diseases relative to the duration of incapacity to work" was to determine the role of attending physicians (or general practitioners), within the meaning of Section 54 of Act No. 187/2006 Coll., on sickness insurance, as amended (hereinafter referred to as the ZNP) in relation to the recognition and duration of temporary incapacity for work in insured persons under 65 years of age treated with state-of-the-art non-pharmacological methods. Completion of the project led to an expansion of the socio-economic knowledge base affecting social protection systems and the quality of working life. The social contribution of research is that it clearly identified the needs of those entitled to paid sick leave as a clearly necessary item in the state budget for specific cardiovascular diseases, thus meeting one of the specific objectives of the Ministry of Labour and Social Affairs CR (MPSV), which is to increase the efficiency of the social system, including the payment of social benefits. On the basis of the study results, the methodology of Czech Social Security Administration (ČSSZ) was updated to improve the assessment of temporary work incapacity. Furthermore, the results were used to modify the standards for the length of temporary incapacity for selected diagnoses according to the International Classification of Diseases ICD-10. The results are used by the MPSV, administrative authorities, and local administrations.

Goals and social contribution of R&D&I in social science

The research team in the field of social work with the changing demographics of seniors in the population – with a significant increase forecast by the Czech Statistical Office (ČSÚ) by 2100. Currently, we do not have enough focus on eldercare, creating the risk of a social crisis in the future. As part of the solution, the team focuses on identifying and analyzing new trends and examples of good practice in eldercare in residential facilities, emphasizing the multidisciplinary team approach. There is no comprehensive analysis of these trends in eldercare. The benefits of the project involve the creation of a new model of care using the concept of three-stage housing for the elderly, with an emphasis on maintaining connections with the community, while addressing the need for intergenerational solidarity. This housing model for the elderly is to be implemented in the Czech Republic and is intended to support the development of social services and address the issue of the aging Czech population, even in light of the current demand for self-reliant units.

Another research project examines the issue of social exclusion of the elderly, which is an emerging problem thanks to new lifestyle trends. The research examines the different types of social exclusion, i.e., spatial, economic, cultural, social, and symbolic. In addition to describing the social exclusion of the 65+ elderly living in the Czech Republic, we see social benefits coming from the project's proposed strategy for overcoming social exclusion among the elderly population living in the home

environment. The socio-economic contribution of the project lies in mapping the socio-economic status of seniors living domestically in the context of social exclusivity. The project results will be utilized by the Ministry of Labor and Social Affairs of the Czech Republic, social service departments of municipalities, towns, municipalities, and Regions, and those that provide social service for seniors and health services for the elderly, as well as social and health care workers.

Another issue of importance in contemporary European society are social determinants of health, which have been taken up legislatively under the Political Declaration of Social Determinant of Health adopted in Rio de Janeiro in October 2011 (Rio Political Declaration on Social Determinants of Health) and the creation of the Committee of Social Determinants of Health under the World Health Organisation (hereinafter referred to as WHO).

A multidisciplinary team selected 10 social determinants of health (social gradient, stress, childhood, social exclusion, work and unemployment, social support, addiction, nutrition, and transport) in the five largest groups of immigrants in the CZ (Ukrainians, Slovaks, Vietnamese, Poles and Russians). In view of the population forecast mentioned above, it is clear that the integration of foreigners is important for the proper financing of the pension system and addressing the so-called “pension system crisis” and “refugee crisis” that Europe has faced in recent years.

Insufficient systematic and legislative coordination of rehabilitation in the Czech Republic (mainly due to the failed acceptance the Law on the Rehabilitation of Persons with Disabilities and the amendment and supplementation with other laws) has weakened the ability to provide quality, low-cost care for clients in the home environment (compared to institutional care). The results of research carried out in this area by the FHSS research team highlighted the crucial importance of the cooperation among multidisciplinary team members in community care (in particular social work, physiotherapy, and occupational therapy); however, this approach currently lacks legislative support. The economic costs of home care, which is provided mainly by informal caregivers, are significantly lower compared to institutional care, but there is a great need for legislative support, including financial coordination, which is essential coordinated and comprehensive care.

Another socially relevant topic addressed by the FHSS is the studying private sex business, which brings needed insight into the social, economic, and social pathology of this group of people. This is an understudied segment of Czech society and needs greater attention.

There is also research on the social status of Roma women that has highlighted important aspects of those living with ethnically defined gender roles. The gender-specific roles within the Roma community need to be taken into account during the development of integration policies.

Goals and social contributions of Public Safety R&D&I

In the fields of radiology, toxicology, and population safety, applied research seeks information and conclusions that can benefit professionals and the lay public. This is exemplified by close cooperation with the basic components of the integrated rescue system and other institutions, such as the Fire Rescue Service of the Czech Republic, the Regional Directorate of the South Bohemian Region Police, the Regional Office of the South Bohemian Region, Temelín power plant, and the State Nuclear Safety Authority.

Research teams examine the action of physical, chemical and several other factors on human health and the resolution of emergencies in which these factors pose a risk. Recent research topics include public safety research "Population protection with a view to differentiation within the population" (identification, prevention and protection against threats to critical infrastructure), Biodosimetry (i.e., exposure to radiation), and ethical issues in the context of environmental health.

There are several noteworthy research projects that an important social contribution. In particular, "Population protection with a view to differentiation within the population," which yielded a Certified Methodology under the name "Methodology for planning, preparing, and carrying out population evacuations from emergency planning zone." This Methodology was supported on the basis of § 7 para. Article 8(a) and (b) f Act No. 239/2000 Coll., of the integrated rescue system and amended Sections 12 to 14 of Decree No. 380/2002 Coll., calling for the preparation and implementation of public safety training procedures. The results are used by national, regional, and municipal authorities (bodies responsible for planning, preparing and carrying out evacuations), state administration of the Integrated Rescue Service (IZS) dealing with evacuations from emergency planning zones and health emergency services to improve evacuation procedures.

Other noteworthy social benefits are related to radiation protection and environmental health. FHSS faculty member prof. Zölzer, is one of the founding members of project OPERRA – Open Project for the European Radiation Research Area" and is a leader of the "Humanities and Social Sciences in Radiation Protection," and "MELODI – the Multidisciplinary European Low Dose Initiative", which provides advisory services to the European Commission and organizes the annual European Radiation Protection Week.

The Department of Radiology, Toxicology, and Public Safety is very dedicated to radiation safety and the possible implementations of ethical radiation safety issues on a wider scale, for example through TG109 "Ethics of Radiological Protection" and TG109 "Ethics of Radiological Safety in Medicine" – a project under the European EURATOM Program).

