

eHealth – availability of health care in the smart countryside

This short study is a continuation of the study on business in smart municipalities, where the basic facts about the specific territorial and regional characteristics of the Czech Republic were presented and the basic conceptual framework for the development of smart countryside was described. The next part was dedicated to energy - firstly, a factual report on the current development of energy sector in the Czech Republic, followed by community energy sector, which has been the subject of discussions and public support for a long time. In the third part, attention is turned to the issue of the availability of health care and its gradual connection with social services.

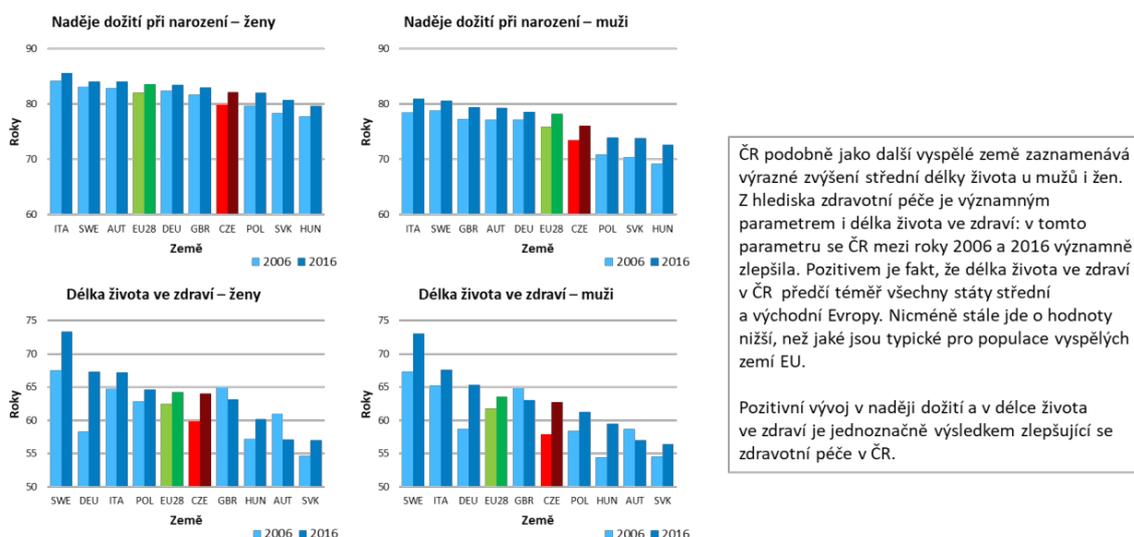
A. Healthcare in the Czech Republic – context

The basic document for health care in the Czech Republic is the Strategic Framework for the Development of Health Care in the Czech Republic until 2030 (also SRRPZ or Strategy), which was approved by the government on 13 July 2020. It is linked to the 2030 Agenda for Sustainable Development, SDG 3 - "Ensure healthy life and increase its quality for everyone at any age." Three strategic and seven specific goals are set in the Strategy:

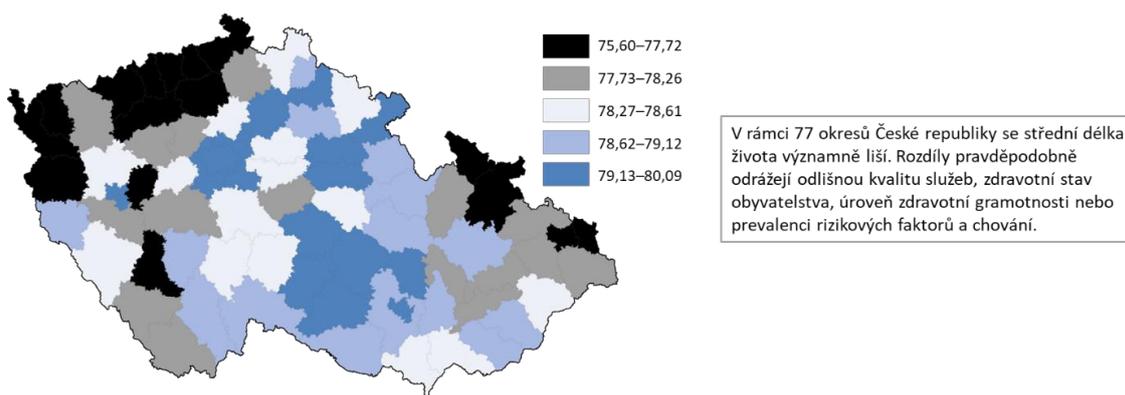
- 1. Protection and improvement of population health**
 - 1.1 Reform of primary care
 - 1.2 Disease prevention, health promotion and protection, increasing health literacy
- 2. Optimization of the healthcare system**
 - 2.1 Implementation of integrated care models, integration of health and social care, reform of mental health care
 - 2.2 Staff stabilization of the health sector
 - 2.3 Digitization of the healthcare sector
 - 2.4 Optimization of the payment system in the healthcare sector
- 3. Support of science and research**
 - 3.1 Involvement of science and research in solving the priority tasks of the health sector

Specific goals are determining the investment and non-investment priorities of the Ministry of Health in the current period of support from EU funds.

The Czech Republic's Strategic Framework 2030 sets the goal "The health of all population groups is improving" for the healthcare sector. This goal is extremely ambitious, given that life expectancy is increasing, but this growth is faster than healthy life expectancy (see graph below and other information provided here - source: SRRPZ). Referring to the Lalonde report, the Strategy states that lifestyle factors contribute 50% to people's health, genetic factors 20%, environmental factors 15%, and factors reflecting the functioning of the health system 15%. In addition, of course, the social and economic situation in particular regions, characterized in the figure below by the life expectancy at birth, plays a significant role. When considering all the influencing factors, including the availability of health care, not only from a spatial point of view, but especially from a personnel point of view (long-term increase in the average age of health workers – aging of health care workers), **an orientation to long-term care and community care are essential for sustainable financing of health care**. Currently, there are almost 176,000 health care providers in the Czech Republic, both individuals and companies of various sizes.



Graf č. 1: Naděje dožití a délka života ve zdraví: mezinárodní srovnání v trendu, Eurostat Health Database (2019)



Graf č. 2: Délka života při narození – okresy ČR podle dat OECD, OECD Economic Surveys: Czech Republic 2018

Solving as many health problems as possible with general practitioners already runs into a lack of their capacity and the capacity of outpatient specialists, when at the same time their services are highly used (the Strategy states 7.5 visits per patient per year, which is an above-the average value in the European comparison). The availability of outpatient specialists and general practitioners also varies regionally – there are plenty of them in large cities, especially in Prague and Brno, but very few in smaller settlements, especially those with less than 2,000 inhabitants and in less attractive areas of the country. The density of medical doctors per 1000 population is 5.7 in urban areas and 4.2 in rural areas. The problem is the age composition of doctors, especially the high number of older doctors in rural areas who will retire in the foreseeable future.

Good coordination of health and social care is essential both now and in the near future. The reason is the aging of the population, the increasing overall morbidity of the elderly and the increasing prevalence of serious long-term diseases (malignant tumors, diabetes mellitus, neurodegenerative disorders in old age, etc.). This requires a new organizational model of health care and social services. In this respect the situation is similar to that of doctors –

conditions and availability vary regionally and according to the size of the settlements. According to the available analyses, some types of social services are relatively evenly represented regionally, especially social counselling centres, homes for the elderly, homes for people with disabilities, homes with a special regime, and partially centres for social rehabilitation services. The coverage of shelters and sheltered housing is very different regionally, in some regions day service centres, weekly inpatients, low-threshold day centres, intervention centres, aftercare facilities and other facilities are not available.

The need for both home care and long-term care is growing – the share of the population aged over 80 is projected to rise from 4% in 2015 to 9% in 2050. Expenditure on long-term care accounted for 1.3% of GDP in 2015, of which 82 % was inpatient long-term care. If this segment is to remain sustainable in the long term, it is essential to develop comprehensive home care as an alternative to long-term hospitalization.

According to the National Register of Health Care Workers (NRZP) and the National Register of Health Service Providers (NRPZS), at the time of the creation of the analysis for the SRRPZ, a total of 42,000 full-time doctors, 7,540 full-time dentists, 6,460 full-time pharmacists and 82,300 full-time nurses and midwives were active. The total number of active healthcare workers reached 214,797 in 2017, the number of nurses in the system is below average, both in relation to the number of doctors and to the necessary number of nurses in hospitals, measured per 1,000 inhabitants. Due to their old age, 400-500 doctors leave the system every year.

At the same time, it is very significant for the organization of health care that in the last 15 years, approximately 64% of female students and 36% of male students have completed their medical studies - thus, a fundamental feminization of the health sector is taking place. This will affect the provision of care for two main reasons – on the one hand, the departure of young female doctors on maternity leave, and on the other hand, the orientation of women to other medical fields than men.

Due to the necessary (fundamental) changes in the organization of health care, the greatest possible support for research and development is necessary. On the one hand in the medical field, i.e. research into the causes of diseases and treatment options, on the other hand in the organization of healthcare. The research should therefore focus on the following goals:

- Research support with an emphasis on prevention, verification of new effective procedures in primary prevention, introduction and testing of new secondary prevention programs and targeted programs for the early detection of serious diseases
- Support for research on behaviour in relation to health, including regular monitoring of the level of health literacy of the population
- Support of research activities in relation to the aging of the population and valid studies on the health status of the population of the Czech Republic
- Creation of a research and innovation base for digitization of healthcare and development of the knowledge base of digital healthcare.

The potential for saving financial resources and human labour is seen especially in the support of research focused on ICT, IoT and artificial intelligence applications in healthcare and methods based on these technologies, as well as in the field of telemedicine.

Care for the long-term sick, which requires almost round-the-clock monitoring, will no longer be possible in the near future without further technological innovations. Technological development facilitating remote monitoring and early detection of health problems can fundamentally increase the safety of care for the sick, solve the lack of professional staff and ensure a shift in the focus of care to the patients' home environment. The importance of technological changes is evidenced by the growth of Alzheimer's dementia and dementia of the elderly in general, which has reached up to 5% year-on-year in recent years.

Similarly, the National Action Plan for Mental Health 2020 _2030, which was created in parallel with the Strategy described above, states the need to create tools for the coordinated provision of services in the field of mental health care and the transition from institutional to community care. Extensive research and development is also needed in this area, the importance of which is growing exceptionally, on the one hand due to changes in implementation and financing models, and on the other hand due to the rapidly increasing availability of new technologies that can be used in patient care.

The Health 2030+ initiative¹ provides an important platform for the discussion of a wide range of experts.

In the field of health research, both the new Concept of health research until 2030 and the Program for the support of applied health research for the years 2024-2030 are significant. The rationale for the focus of the research concept states:

"The relative structure of the population of the Czech Republic clearly shows three fundamental age classes, whose further shift in time will have a significant impact on the healthcare system. This is a very numerous class of residents aged 40-50 and especially 30-40. These population categories will reach the age of 60 and over in the next fifteen or 20-25 years and will inevitably significantly increase the need for health and social services. The decline in the number of people aged 10-25 is very significant, which together with the increasing average age of mothers at the time of giving birth to their first child creates a demographic risk of a shortage of people of working age in the next 15-30 years.

The pressure to change the structure of the health and social services offered will further intensify the predicted increase in average life expectancy. According to the middle version of the CZSO demographic projection, the average life expectancy at birth will increase and in 2050 it should reach 82.1 years for men and 86.7 years for women. This positive development must be supported by increasing health literacy and citizens' responsibility for their health. It is necessary to extend the life span in good health along with the average life expectancy. A longer median life span will, however, also bring a new dimension to the health problems of the aging population."

The Concept then formulates the following horizontal goals:

- increase the relative share of support for medical research from public funds,
- strengthen international cooperation in health research,
- increase the quality of medical research,

¹ <https://konceptce.kancelarzp.cz/konceptce-zdravotnictvi-2030/>

- involve young researchers in health research,
- use the findings of medical research for the implementation of new clinical and laboratory procedures,
- improve the connection and continuity of basic and applied medical research,
- project the current assessment of the state of health of our population and current health threats into the priorities of health research, especially with a focus on vulnerable and disadvantaged groups (children, seniors, people with disabilities, foreigners, socially excluded people, LGBTIQ people, etc.)
- use the results of research in pre- and post-graduate education of doctors and other workers in the healthcare sector,
- use the results of medical research for the presentation of research organizations and the popularization of medical science,
- cross-sectionally project the point of view of sex and gender into health research in all its phases (from the design of the methodology to its outputs),
- ensure quality working conditions for all persons working in health research, including caregivers and other potentially disadvantaged groups

Of the individual sub-areas, the following are especially important for the "smart countryside":

- Socioeconomic aspects of the healthcare sector
- Digitization of the healthcare sector
- Demographic changes and care for the elderly
- Health care
- Health literacy and patient orientation
- Health promotion and prevention
- Global health
- Development of new medical devices and equipment
- Telemedicine and eHealth
- Innovative procedures in the field of palliative and supportive care

B. Health and social services in rural areas

In **the Rural Development Concept**, approved by the government in 2019, the analytical part shows the current equipment of rural areas with medical facilities. The Moravian-Silesian region has the best equipped municipalities, where approximately half of the municipalities are equipped with **medical facilities**. On the contrary, the worst-equipped municipalities of up to 2,000 inhabitants are in the Vysočina Region, where only 17% of municipalities in this size category have medical facilities, which is mainly related to the character of the population of both regions. Within the settlement structure of the Vysočina Region, there are very small villages of up to 500 or 200 inhabitants largely represented. The Concept shows the civic amenities of municipalities in 2016, which means relatively older data, however, the situation has not fundamentally changed until now, so the description is still broadly relevant.

Civic amenities of municipalities in 2016²

Region	Share (%)		
	Post office	School	Health care facility
Central-Bohemia	37,2	34,4	31,6
South-Bohemia	34,8	27,6	28,7
Plzeňský	36,5	30,3	26,9
Karlovarský	63,4	48,5	49,3
Ústecký	51,1	38,1	46,6
Liberecký	57,7	57,2	38,6
Královehradecký	47,3	40,6	29,0
Pardubický	37,9	40,1	25,7
Vysočina	28,6	29,4	21,3
South-Moravia	42,2	49,5	36,1
Olomoucký	48,5	53,2	46,0
Zlínský	42,7	59,3	46,6
Moravskoslezský	69,0	71,7	62,7

From the point of view of the business structure and with regard to the sector, the countryside was as follows in 2017³:

Sector	Share of entrepreneurial activities
Retail, wholesale (including repair and maintenance of motor vehicles)	20,4 %
Industry	14,9 %
Professional and technical activities	10,0 %
Construction	9,8 %

² CZSO: online data: Equipment of municipalities. The table includes all categories of municipalities in the respective region (Equipment of municipalities. The table includes all categories of municipalities in the respective region).

³ UKEI: BACKGROUND ANALYZES FOR THE PREPARATION OF THE CAP IN THE 2021+ PROGRAM PERIOD (2018), expert report for the Ministry of the Interior, non-public (BACKGROUND ANALYZES FOR THE PREPARATION OF THE CAP IN THE 2021+ PROGRAM PERIOD (2018), expert report for the Ministry of the Interior, do not publish).

Health and social care professions	9,7 %
Lodging, catering, hospitality	9,2 %
Agriculture	5,0 %
Others	21,0 %

When conducting surveys among the rural population, the poor availability of medical care, the lack of doctors to provide it, and in some cases the quality of care resonate.

The concept anticipates what was subsequently formulated in the new SRRPZ, i.e. that it is necessary to set up a new "service financing system at the border of health and social issues. A common theme in the field of health and social services is the ongoing process of deinstitutionalization and transformation of these services towards the community (into the clients'/patients' own social environment). It is also necessary to address the personnel capacity within health and social services, also with regard to demographic trends. Other sustainable forms of financing in the social area, such as financial instruments, greater support for social entrepreneurship and active employment by supporting small and family businesses, also deserve support. The basis, without which a standard quality of life cannot be achieved, is an increase in the availability of housing."

C. SMART solution

The Concept of Smart Cities - resilience through SMART solutions for municipalities, cities and regions, approved by the government in 2021, includes health and social services in pillar A - People and communities, component A2 - Accessible social and health services. The guarantor of this issue is the Ministry of Labor and Social Affairs in cooperation with the Ministry of Health and with municipalities. The concept states:

"Frequently discussed issues at the regional and local level include the interlinking of social and health services, the need to provide primary health care within walking distance, and the lack of health and social workers for the growing number of seniors. The risks arising from these shortcomings have also been proven during the "coronacrisis", when decentralized care and care at home is not only welcomed by clients, but also reduces the risks of infection or other risks arising from extreme situations. Doctors were able and willing to implement an ordering system, to discuss patients' health problems through remote communication. In addition, the advantages of eRecipe, eSick-note and other digital ways of communication became apparent. The use of procedures (digital paths) that will ensure the conditions for disease prevention, effective management of diseases and socio-pathological phenomena, ensuring care for all age groups is a great challenge of the coming period.

Despite all the above-mentioned problems, the Czech Republic has a very high-quality healthcare system and a safe social system, including a social safety net. Primary care is provided essentially as a doctor's business, some cities and all regions are the founders of

hospitals. Most social care is paid for from public funds. In recent years, there have been disproportions in care in the countryside and in big cities. Life expectancy is increasing, but healthy life expectancy is growing less compared to other countries, and the health and social care system is becoming more expensive.

Objectives:

A2.1

A decentralized system of linked health and social care is implemented at the level of the village, city and region.

Type measures:

- Transformation of social care into community care.
- Linking health and social care at the local level (at the level of cities/municipalities and regions), ensuring access to social and health care for every resident of the village at any age and in different life situations in accordance with the "last mile" principle based on the neighbourhood network (community) assistance with the support of digital technologies.
- Creation of the position of coordinator in the area of integrated social and health services in the municipality or at the level of the union of municipalities or the region.

A2.2

Effective local health and social services make full use of digital technologies.

Type measures:

- Introduction of new technological solutions and innovative approaches in the field of health and social care (eHealth, telehealth, mHealth, telemedicine).
- Creation of a concept for the use of assistive technologies and telemedicine enabling a safe stay in the home environment.

A2.3

Optimal conditions are created for disease prevention and health-promoting activities on site (i.e. people live to a healthy old age).

Type measures:

- Use of digital technologies for responsible management of one's own health – secure electronic access to health documentation, facilitating access to information (for residents) about care provision, including municipal websites with information in "open information" format (for further use by special services).
- Implementation of preventive programs to support health for all age categories, support of a healthy lifestyle, balanced diet and healthy living, support of physical activities and mental health care (support of its availability)."

In the Implementation Plan of the Smart Cities Concept, which the government approved in 2022, the measure "Strengthening the availability of social services for groups at risk of social exclusion through SMART solutions" is linked to A2. The guarantor is the Ministry of Internal Affairs and Communications. At present, this "card" of measures is being evaluated.

D. How to come up with new solutions

The need for new solutions in the field of healthcare and social care emerges from all the strategic documents mentioned above. It should be mentioned that there are more than 6,200 municipalities in the Czech Republic, of which 5,800 have less than 3,000 inhabitants. Citizens have long been accustomed to good provision of services - let's remind you that the Czech Republic has the most libraries per municipality and population in the world, and one of the highest numbers of primary schools per population. It is the same with technical infrastructure. Implementing an innovative and at the same time cohesive/regional policy is therefore an extremely difficult discipline. New solutions can therefore conflict with current practices. The Ministry for Regional Development has established a working group for the implementation of the Rural Development Concept, which regularly deals with individual areas of problems. It is personally and organizationally linked to the Smart Cities working group, and receives stimuli for its activities from it.

Small observations from the meeting of the working group for rural development at the MMR (November 28, 2022):

- Medical students are mostly from bigger cities, so after their studies they stay "at home" - in bigger cities. The question is, why aren't there more students from rural areas? Often the reason is that they are not good enough to pass the entrance exams and get accepted - or is the bigger issue that rural students are not applying to medicine? (noted by a VZP representative)
- It is not clear whether, for example, the medical chamber knows how many doctors should enter the healthcare system so that their number is sufficient? Do we know what the age composition of doctors in individual specialties looks like? The number and structure of graduates is interesting - the number of medical students has been around 20,000 for a long time, while the number of women and foreigners is growing (presented by Dr. Kubek)
- The fact that there are not enough doctors (general practitioners, paediatricians, gynecologists, psychiatrists) is being talked about everywhere. Has anyone dealt with doctors families? Are good conditions prepared for them in the countryside? Can they work remotely, educate children in good schools?

During a short field survey, which was mainly attended by experts from the health and social services sectors, suggestions were obtained that correspond to the above facts, questions and problems to be solved.

The COVID-19 pandemic was, on the one hand, a significant impetus for distance medicine, assistive and social technologies, and on the other hand, the development that had already begun in this area was disrupted. In the whole issue, the link between the academic community and the state administration is important, unfortunately there is not enough linking of research and practice, more extensive pilot verification, which would show a number of barriers and shortcomings of new procedures and technologies. This ultimately makes the research results of little or no use. The state administration strives to innovate, but due to the influence of the academic community, it enables or financially supports what has already been developed elsewhere, or what does not benefit society and spoils the "good name" of new procedures.

At the same time, a number of new practical solutions are being created in the Czech Republic, which may also be interesting abroad. Frequent arguments for adopting examples from abroad do not correspond to the real state of knowledge and new solutions in the Czech Republic. On the contrary, it often happens that Czech ideas are adopted abroad and from there "returned" to the Czech Republic as foreign solutions that are recommended to us. The linking of social and medical procedures is, despite all declarations, an intended state rather than a reality.

The third CZ task force meeting organized by Atelier Česko in Prague took place at the Hybernská Campus on November 30, 2023.

Program:

- 9:45 – 10:00 Presentation of participants
- 10:00 – 10:05 Introduction
Vít Král, Atelier Česko
- 10:05 – 10:15 Smart communities without doctors and social workers
or without health and social care?
Rut Bízková, Smart Rural 27
<https://www.smartrural27.eu>
- 10:15 – 10:45 eHealth and new tools in social care
Ladislav Mlčák, Technology Agency of the Czech Republic
- 10:45 – 11:00 Discussion

- 11:00 – 11:20 New options for rapid diagnosis (e.g. from an eye scan, using AI)
Jiří Tomšej, Viderai
- 11:20 – 11:40 Telemedicine tools in psychiatry and psychology
Iveta Fajnerová, National Institute of Mental Health, Klecany
- 11:40 – 12:00 First experience with the implementation of the robot Robin
Petr Panýrek, High Tech Park
- 12:00 – 12:30 Discussion and break

- 12:30 – 12:50 Provision of social care in small municipalities through remote assistance
Zdislav Doleček, University Hospital Olomouc
- 12:50 – 13:10 Intelligent care for the elderly
Kristýna Bernášková, INESAN
- 13:10 – 13:29 Discussion
- 13:29 – 13:30 Conclusion
Vít Král, Atelier Česko

The meeting was attended mainly by representatives of the Ministries (Ministry of Labor and Social Affairs, Ministry of Industry and Trade, Ministry for Regional Development), innovation centres, local action groups (LAG) and research workplaces.

Knowledge from practice:

- Evidence of the urgency of solving the problem of population aging in the Czech Republic is the growing interest in establishing private homes for the elderly. Recently, two investment funds were even created to finance them.
- A number of research teams are engaged in reducing the cost of preventive examinations, detection and treatment of diseases at an early stage, and thus the entire healthcare sector (e.g. detection of retinal diseases) - new procedures (including equipment for their implementation) are certified medical devices - there must be competent authorities, which can issue the certificate. There is only one such authority in the Czech Republic, three in the Netherlands. The lack of such authorities and at the same time the slowness of approval is a big barrier to the transfer of solutions into practice. A good example can be the USA - there is a "fast lane for new non-invasive technologies" in approvals - American companies get their solutions to the market quickly and thus outpace the competition
- The support of the region is important for the development of telemedicine and eHealth – the National Telemedicine Center was established in the Olomouc Faculty Hospital. Some projects of this centre are implemented within the Smart Region. The Olomouc Region has a number of municipalities far from the centre, so it is important to find ways to check the immediate state of health without, for example, pregnant women having to drive tens of kilometres to specialized workplaces. Currently, for example, a solution is being developed for gestational diabetes and its detection in pregnant women, there is also a solution for remote glaucoma screening, and a method of online psychiatric consultations is being developed. Practical obstacles to the use of technology include, for example, the acceptance of digital documents by insurance companies. The interest of health insurance companies in ascertaining the state of health in the early stages of diseases is also important. The good news is the telemedicine project from the National Recovery Plan, where the Olomouc National Telemedicine Center is working with insurance companies, lawyers and the Ministry of Health to draft further legislation for telemedicine interventions.
- As already mentioned above, psychological problems and increasingly frequent cases of mental illness are a growing problem. The National Institute of Mental Health is working on a number of topics that may be important for smart communities – it works, for example, on remote monitoring of mental illnesses, on learning to manage phobias using VR (managing obsessive-compulsive behaviour), biofeedback (VR breathing), Trekog – memory training (see <https://trekog.nudz.cz>). The advantage is that a number of techniques can be used even by older people who are not computer literate. The problem, however, is that even the software is becoming a tool for the health sector that has to be approved by the State Institute for Drug Control - SÚKL (according to the new European legislation, or its interpretation).
- The COVID-19 pandemic marked a great advance in the speed of technology development, as well as eHealth (a note on terminology: telemedicine includes technological solutions, mostly with the use of digitization, or "self-examination", it is a subset of eHealth, which also means ensuring, for example, mental well-being, quality of life. That is: eHealth= telemedicine + psychology=quality of life). However, it is necessary to try such solutions more and more realistically. An example is the use of a robot for the first time in a smaller village in the Czech Republic - it is being tested in the village of Třebihošť, where the robot works during the day for teaching in a school,

then in a health kiosk (to measure blood pressure, etc.) and in the evening as a companion in a home for the elderly. An interesting solution is, for example, a psycho-walkman for the entertainment of seniors - see Prague 9, living lab, where the experiment includes 120 residents in their own apartments. Another possibility is, for example, examining the dentition of young children at school - e.g. in socially excluded communities (photographs or online scanning of the dentition will be examined by a doctor remotely). The problem is especially community social service, which is the weakest link in the chain. It is necessary to strengthen it.

E. Recommendations

The findings and discussion during the task force meeting resulted in the following recommendations:

1. Ministry of Labor and Social Affairs and Ministry of Health

Pay attention to the growth of private homes for the elderly and the possibility of converting small urban hospitals into social health facilities. Part of improving the quality of care for the elderly should also be the reduction of barriers in connection with social and health care. This should also be taken into account in the upcoming legislation on health and social services.

2. Ministry of Industry and Trade and Ministry of Health

It is necessary to urgently solve the issue of telemedicine in terms of the authorization of new non-invasive techniques and technologies by the State Institute for Drug Control, or recognizing them as medical devices. This is a high value-added sector and allowing these services to be brought to market quickly provides a competitive advantage for the sector.

3. Ministry of Industry and Trade, Ministry of Regional Development and Ministry of Education, Youth and Sports

In the new solutions, the importance of their support from the regions is obvious, especially as part of supporting the activities of regional innovation centres. The vast majority of these centers are supported through OP JAK – Smart Accelerator (MEYS). Rapid and regular mediation of knowledge for their needs and financial and other support from the regions is therefore extremely important for the development of the regions.

4. Ministry of Health, Government Council for Research, Development and Innovation, Technology Agency of the Czech Republic

Healthcare/medical innovations and innovations in social work are an extremely important segment of improving conditions for the development of municipalities and regions, for increasing the quality of life in municipalities and for the competitiveness of the Czech Republic. It would therefore be important to sufficiently support research in this area within the departmental research program of the Ministry of Health and through applied research programs administered by the Technology Agency of the Czech Republic.

5. Ministry of Agriculture and Ministry of Regional Development

The Ministry of Agriculture approves Local Action Group (LAG) strategies. LAGs should support the SMART village concept to the maximum extent possible. It is therefore necessary to involve LAGs in the implementation of the eHealth concept and to support this financially.

F. Conclusion

The meeting of the Czech Republic task force resulted in a number of recommendations, not only on the issue of eHealth, but also on community energy and local business. All these recommendations will be incorporated into the "cards" of the specification measures of the Implementation Document for the Concept of Smart Cities - resilience through SMART solutions for municipalities, cities and regions. An update of the Implementation Document is currently being prepared by the Ministry for Regional Development. It should be submitted to the government in mid-2024.

As for SMART villages, it turns out to be very useful that LAGs in the Czech Republic are already financed from a number of sources, not only from the Rural Development Program. They are also supported by the Ministry of Regional Development in terms of sustainable regional development, the Ministry of Industry and Trade in the field of consultancy for the spread of fast internet, and the Ministry of the Environment in the field of energy savings. Their role in the implementation of the national RIS3 strategy (strategy for intelligent specialization) is considered. A number of LAGs participate in research projects supported by the Technology Agency of the Czech Republic.

SMART solutions in smaller municipalities (i.e. practically in the entire territory of the Czech Republic – 5,800 municipalities in the Czech Republic have less than 3,000 inhabitants, LAGs cover 98% of the territory of the Czech Republic) are becoming more important due to the fact that, at the request of the Ministry of Agriculture, for the first time LAGs in their strategies must comment on the SMART concept and the possibilities of implementation within these strategies. This will also be taken into account when updating the Smart Cities Concept implementation document.