



MINISTERSTVO ZDRAVOTNICTVÍ
ČESKÉ REPUBLIKY

HEALTH2030



**STRATEGIC FRAMEWORK FOR
HEALTHCARE DEVELOPMENT IN THE
CZECH REPUBLIC UNTIL 2030**



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RESOLUTION OF THE GOVERNMENT OF THE CZECH REPUBLIC

of 13 July 2020, No. 743

**regarding the Strategic Framework for Healthcare Development in the Czech Republic
until 2030**

The Government

- I. approves the Strategic Framework for Healthcare Development in the Czech Republic until 2030, contained in part III of document ref. no. 703/20;
- II. obliges
 1. the Minister of Health
 - a) to prepare and submit to the government by 30 October 2020 a draft of the Implementation Plans,
 - b) to inform the government every two years about the progress of the implementation of the Strategic Framework for Healthcare Development in the Czech Republic until 2030, with the first report to be submitted by 30 June 2023,
 - c) to prepare and submit to the government by 31 December 2031 a final report on the implementation of the Strategic Framework for Healthcare Development in the Czech Republic until 2030;
 2. the members of the government
 - a) to cooperate in fulfilling the objectives of the Strategic Framework for Healthcare Development in the Czech Republic until 2030,
 - b) to take into account the Strategic Framework for Healthcare Development in the Czech Republic until 2030 when preparing departmental strategic documents;
- III. recommends to the governors and the mayor of the capital city of Prague
 1. to cooperate in fulfilling the goals of the Strategic Framework for Healthcare Development in the Czech Republic until 2030,
 2. to take into account the Strategic Framework for Healthcare Development in the Czech Republic until 2030 when preparing strategic documents of individual regions and the capital city of Prague.

To be implemented by:

the members of the government

Notified:

governors,
the Mayor of the Capital City of Prague

Ing. Andrej Babiš, m. p.
Prime Minister

SUMMARY

Title	STRATEGIC FRAMEWORK FOR HEALTHCARE DEVELOPMENT IN THE CZECH REPUBLIC UNTIL 2030
Submitter	Ministry of Health of the Czech Republic
Strategic Framework creation administrator	Mgr. et Mgr. Adam Vojtěch, MHA , Health Minister
Year of preparation of the Strategic Framework	2018–2019
Strategic Framework approver	Government of the Czech Republic
Date of approval	18 November 2019, Resolution 817/2019
Form of approval	Resolution of the Government of the Czech Republic No. 743/2020
Last update	13 July 2020
Implementation period	2021–2030
Responsibility for implementation	Ministry of Health of the Czech Republic
Context of the creation of the Strategic Framework	<p>The area of healthcare is an integral part of basic strategic government documents. The preparation of the Strategic Framework for Healthcare Development in the Czech Republic until 2030 (hereinafter referred to as the <i>“Health 2030 Strategic Framework”</i>) is a continuation of the Czech Republic 2030 Strategic Framework adopted by the Government of the Czech Republic, which through its decision also set the basic overarching healthcare goal: <i>“The health of all population groups is improving”</i>.</p> <p>The Health 2030 Strategic Framework also builds on previously formulated strategic materials such as Health 2020 – National Strategy for the Protection and Promotion of Health and Disease Prevention with relevant action plans; National eHealth Strategy and Psychiatric Care Reform Strategy.</p> <p>In an international context, the 2030 Agenda for Sustainable Development, which is the basis for the <i>“SDGs”</i> – the UN Sustainable Development Goals, was the starting point for the Health 2030 Strategic Framework. For the health sector, the determining goal is SDG 3: <i>“Ensure healthy lives and promote well-being for all at all ages”</i>.</p> <p>The principles, areas, measures and priorities of the Health 2030 Strategic Framework were also reflected in the concurrently prepared Regional Development Strategy of the Czech Republic 2021+ as well as in the National Concept of Cohesion Policy Implementation after 2020.</p>

	<p>The Strategic Framework for Health 2030 was approved by the Government of the Czech Republic on 18 November 2019. However, due to the subsequent declaration of the COVID-19 pandemic and its effects, the MoH decided to update its priority areas to place more emphasis on public health protection and support. In this context, the original Specific Objective 1.2 "Primary and secondary disease prevention, increasing health literacy and citizens' responsibility for their own health" has been adapted to "Disease prevention, promotion and health protection; increasing health literacy." The individual sub-objectives of this specific objective and their prioritization were also updated. The COVID-19 pandemic has revealed the need to focus more on the promotion and protection of public health in order to ensure the establishment of a functioning system capable of responding flexibly to possible other threats to public health, including those with cross-border implications. Other areas affected by the pandemic are mainly the personnel stabilization of the Ministry (2.2) and the digitalization of healthcare (2.3).</p>
<p>A brief description of the issues and content of the Strategic Framework</p>	<p>The Health 2030 Strategic Framework is a conceptual document with inter-ministerial overlapping that sets the direction for the development of healthcare for citizens of the Czech Republic in the next decade.</p> <p>The Health 2030 Strategic Framework concentrates the specific objectives of the Czech Republic 2030 Strategic Framework into three strategic goals: 1) Protection and improvement of the health of the population, 2) Optimization of the healthcare system, 3) Support for science and research. These strategic objectives are then divided into seven specific objectives, which reflect the investment and non-investment priorities of the MoH for the programme period of the economic, social and territorial EU cohesion policy 2021+ and which will be implemented through seven related implementation plans.</p> <p>The Health 2030 Strategic Framework is divided into four basic sections, the first is a general and contextual presentation of the document and its visions and goals, followed by an analytical part designed to describe the main factors determining the state and future development of the morbidity of the Czech population, the strengths and weaknesses of the healthcare system and the main conclusions resulting from relevant international recommendations. This is followed by a proposal section that generally explains the continuity of the Health 2030 Strategic Framework and the seven implementation plans and a section devoted to the implementation of the Health 2030 Strategic Framework, its monitoring, evaluation and indicators.</p>

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Foreword by the Minister of Health

Preamble:

All citizens of the Czech Republic should be able to achieve the highest possible level of health and should receive the healthcare they need throughout their lives. They should live and work in conditions that strengthen and do not seriously endanger their health. The right to participate in one's own healthcare is a privilege and obligation.



The current healthcare system is characterized by the successful development of individual clinical disciplines, but it is clear that problems in the area of resources, activities and outcomes are increasing. These problems are only fractionally addressed through partial and short-term measures. The basis of good and economical management should be a broadly conceived strategy of healthcare oriented on the long-term, a strategy that would specify the activities of the Ministry of Health of the Czech Republic and the activities of other levels of healthcare provisioning.

This document is an expression of the effort to strengthen the conceptual work of the Ministry and thus increase the efficacy, economy and sustainability of the healthcare system in the context of demographic, economic and social development. Improving the availability, quality, responsiveness and ethical dimension of health services is essential if healthcare is to be of good quality, safe and sustainable in the long term. At the same time, a greater emphasis must be placed on protecting and maintaining health, strengthening citizens' participation in and responsibility for their own health and improving their health literacy.

The area of healthcare is an integral part of basic strategic government documents. The preparation of the Health 2030 Strategic Framework is thus seamlessly linked to the Czech Republic 2030 Strategic Framework adopted by the Government of the Czech Republic and to the programme "Health 2020: National Strategy for the Protection and Promotion of Health and Disease Prevention." Based on the analysis of the state of health of the population of the Czech Republic, the accessibility and functioning of the Czech healthcare system, basic priority areas that should be focused on in the upcoming period were set out by the Ministry. These priorities will be further elaborated through individual implementation plans.

This strategy is an expression of responsibility and concern for the future. It is about respecting basic human values, which human health is a part of. Human health cannot be ensured by health professionals alone or by the citizens themselves. In order to protect, maintain and improve it, it is desirable to call on all social structures and to exploit all powers and possibilities. Without developing and implementing an appropriate long-term strategy, it would be difficult to ensure the prosperity of society and some of the current issues could even cause serious health, social and economic problems.

It is therefore desirable that other organizations, institutes and institutions, public administration, local governments and the general public accept the Strategy and participate both in the formation of its content and in all of its forms of implementation.

1. Introduction

1.1. Framework Strategy of the Czech Republic for Healthcare

WHO defines health as *"a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"*. This is a useful definition, though it is more a direction and question of maximum possible approximation to this goal. Thus, health is not an end in itself, but rather a means to realize the harmonious development of man. The health potential of each person is the highest degree of health an individual can achieve. It is also determined by the possibility to take care of yourself and others, to retain control of one's life. Society should create the conditions for people to assert their health potential.

Health is determined by a number of factors, such as personal, social, economic and environmental factors, which are mutually influencing variables that significantly affect and determine the health condition of an individual, group of people or society. They include the individual's social, economic and physical environment, as well as individual characteristics and behaviour (gender, heredity, lifestyle, etc.).

Healthcare in the Czech Republic (hereinafter referred to as "CZ") is an integral part of basic strategic materials and government documents. As in the case of other policies, healthcare is bound to international agreements and documents, which are described in more detail in the international context chapter. However, the individual objectives for healthcare development are based on the conditions and needs of the CZ and were formulated in consultation with relevant partners and on the basis of an extensive analytical study annexed to the Health 2030 Strategic Framework.

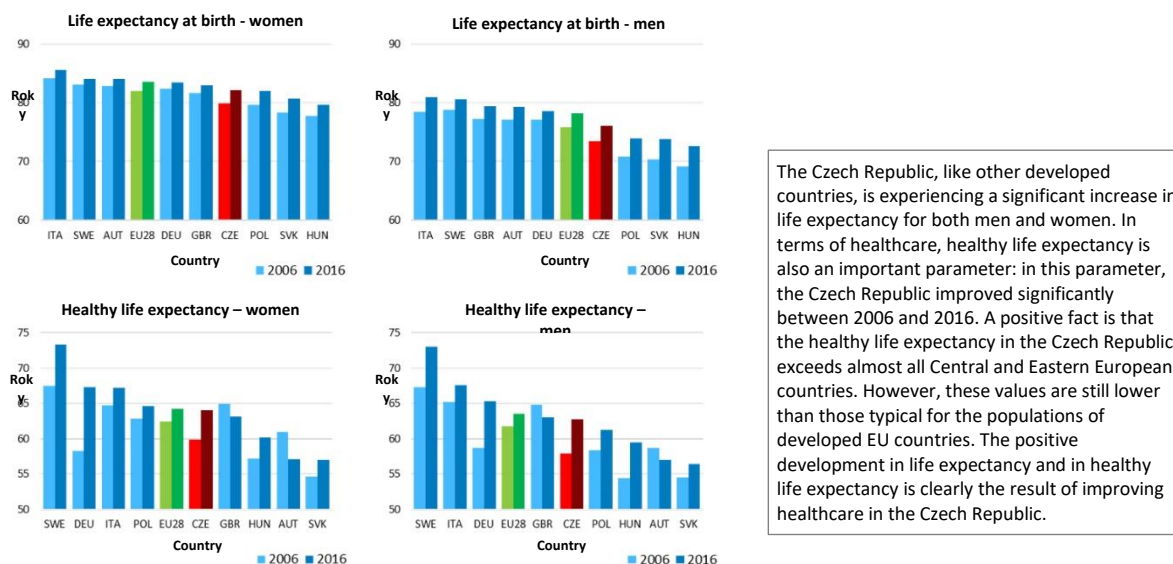
The main approaches to the future development of the Czech Republic, i.e. the quality of life and sustainability reflecting both the needs of the individual, family and community, as well as the need for economic development, which is also a necessary condition for ensuring the health of the population at the highest possible level, were defined by the Czech Republic 2030 Strategic Framework and adopted by the Czech Government on 19 April 2017 via Resolution No. 292, which is also the starting document for the definition of the Health 2030 Strategic Framework.

Quality of life presupposes an investment in the human potential that underlies development. Sustainable development is one that meets the needs of present generations without jeopardizing the ability and possibility to meet the needs of future ones. Sustainable development also implies the ability of long-term decision-making and consideration of the various impacts of the selected solution. Such behaviour is a matter of good governance. The need for good governance is particularly important in the field of healthcare, which is provided in the Czech Republic through public health insurance and regulated by the state. For this reason, the strategic management area is important because uncoordinated measures implemented without setting specific targets cannot ensure the development and sustainability of the healthcare system. The Health 2030 Strategic Framework should build on Health 2020 – the National Strategy for the Protection and Promotion of Health and Disease Prevention, the first comprehensive strategic document adopted by the Ministry of Health. The Health 2030 Strategic Framework aims to capitalize on the experience of implementing Health 2020 by setting up a simpler implementation system.

By adopting the Czech Republic 2030 Strategic Framework, the government of the Czech Republic has identified a basic overarching goal for the health sector, which is *“The health of all population groups is improving.”* This overarching objective is to be achieved by meeting defined specific objectives:

1	Life expectancy in good health is increasing in all groups of the Czech population.
2	The effects causing inequalities in the health sector are being reduced.
3	The public health system is stable and, at the same time, the corresponding professional structure is developing. The average age of medical staff is decreasing and the remuneration of all healthcare workers is increasing.
4	Healthy lifestyles are promoted through higher public spending, with an emphasis on primary disease prevention and health promotion throughout life.
5	The consumption of addictive substances as well as the burden of hazardous substances and noise on the population are reduced through a better environmental quality. The relevant limits for harmful substances and noise are not exceeded.

“The health of all population groups is improving” is an ambitious goal, not only because of the fact that although average life expectancy in the Czech Republic is increasing, its growth is faster than the growth of the healthy life expectancy indicator, which means a prolongation of life with health restrictions.



Graph n. 1: Life expectancy and healthy life expectancy: international comparison of the trend, Eurostat Health Database (2019)

This goal is ambitious, especially because the health status of the population is largely influenced not only by healthcare itself or, more broadly, by the healthcare system, but also by other areas – industry, transport, agriculture, the environment and education. Health

outcomes are influenced by a set of factors ranging from the availability and quality of care to the living conditions or lifestyle choices of the inhabitants. The Lalonde Report¹ (still valid today) states the proportion of individual determinants of the health status as follows: lifestyle factors – 50%, genetic factors – 20%, environmental factors – 15% and factors reflecting the functioning of the healthcare system – 15%.

On the other hand, the health status of the population manifests itself in the rate of employment or the burden on the health and social system and is therefore an important determinant of the national economy. For this reason, inter-ministerial system measures must be carried out as part of the Implementation Plan for the Czech Republic 2030 Strategic Framework².

*"It is not enough to focus on the healthcare system, it is necessary to create conditions for a healthy life and stimulate citizens to make choices in favour of health. Supra-departmental cooperation between key players, i.e. stakeholders in sectors such as health, education, social care, spatial planning, transport and construction needs to be strengthened. It is important to realize that health is strongly influenced by the socio-economic conditions of life, which are determined by educational level, social status, working conditions, income, environmental impact, individual preferences of citizens, etc."*³

The Health 2030 Strategic Framework aims to become the fundamental ministerial conceptual document with an inter-ministerial overlap and to set the direction for the development of care for the health of the Czech population in the next decade. The main vision of the Health 2030 Strategic Framework is to ensure affordable healthcare for all citizens of the CZ regardless of their social and geographical environment, while at the same time ensuring that citizens are more concerned about their health condition.

This vision and challenge for the Czech healthcare system is significantly influenced by a number of factors. The primary factor is demographic development, showing the Czech population will age more and more. This will not only lead to a decline in the productive component of the population, but will also mean a higher demand for health and social services and care in general (the so-called silver economy). The aging of the population is associated with a projected increase in public expenditure on healthcare, which in the long run poses a risk to public budgets. Despite the good fiscal sustainability of public finances in the short term, current economic growth offers an invaluable opportunity to undertake major (structural) reforms to prepare for future challenges.

The aging of the population is not only a problem on the demand side, but also on the supply side, as the aging of healthcare staff carries an increasing risk of future shortages of healthcare workers in certain specializations and in certain regions. In order to ensure the

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A new perspective on the health of Canadians, 1974.

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Government Resolution No. 292/2017 of 19 April 2017.

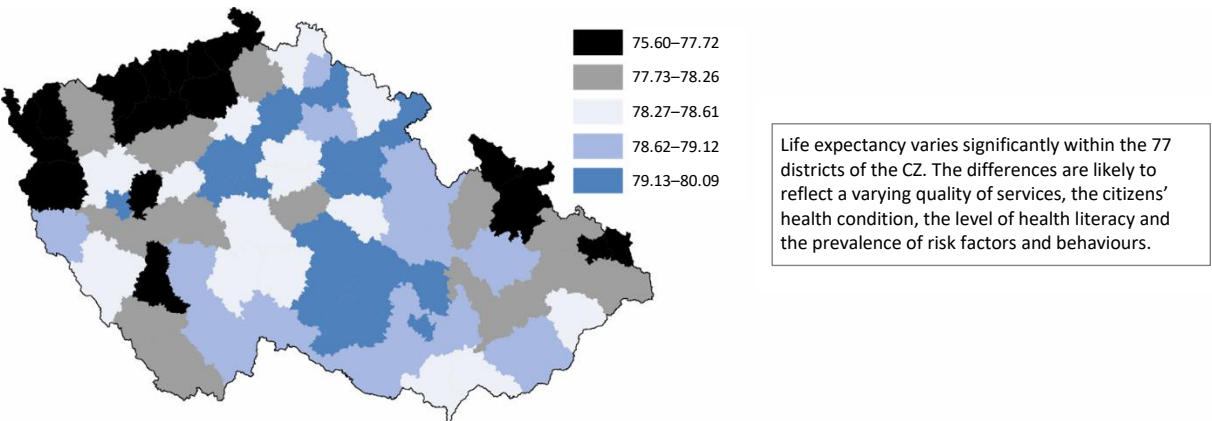
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Czech Republic 2030 Strategic Framework, Specific Objective Card, SO 5.2.

sustainability of healthcare funding, there is also an increasing need to focus development on long-term care and community care.

At the same time, healthcare must be prepared to respond flexibly to emerging threats, such as the COVID-19 epidemic or similar infectious diseases with pandemic potential. In addition to the healthcare system's own professional and capacity readiness, data readiness is also necessary, where the timely acquisition of information on the course of the epidemic and currently available capacities proves to be key for managing the situation and taking effective measures to address it.

Reducing inequalities in the health sector is also a challenge. Although income inequality in the Czech Republic remains low overall⁴, there are significant inequalities in the health of the Czech population. The social environment and status of the individual largely influences the health of citizens. People's disadvantages usually do not change during their lifetime; their vulnerability can even intensify. A disadvantaged position often leads to risk behaviour such as tobacco use, alcohol use, poor eating habits, lack of physical activity, etc. Reducing the impact of the social determinants of health, such as gender, social status, education and the living or working environment, is an important factor in reducing health inequalities in different population groups. The social and economic situation of individual regions is also reflected in significant regional disparities, which can be illustrated, for example, by the difference in life expectancy at birth between individual districts.



Graph n. 2: Life expectancy at birth – districts of the Czech Republic according to the OECD, OECD Economic Surveys: Czech Republic 2018

At the same time, the notion that diseases should be prevented as much as possible is being promoted in the health sector. The promotion of health throughout life, i.e. a regular, long-term and systematic approach to health protection and support, should be the basis of the Czech Republic's health policy. Healthcare should not only function as a safety net for

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Report on the Czech Republic 2019 Accompanying document to the Communication from the Commission to the European Parliament, the European Council, the Council, the European Central Bank and the Eurogroup European Semester 2019: Assessing progress in structural reforms and preventing and correcting macroeconomic imbalances and results of in-depth reviews of structural reforms under Regulation (EU) No. 1176/2011, Brussels, 27.2.2019, p. 9 "Income in 2017 of the richest 20% of the population was approximately 3.4 times higher than the income of the poorest 20%, which is a significantly smaller difference than in the EU (5.1)."

already ill patients, but should also have a preventive function, for example, by making more intensive use of preventive and screening examinations. Equally important is the development of the “health literacy” of the population, i.e. knowledge and skills thanks to which people can act in favour of their own health. A significant aspect of prevention is also emphasizing individuals' responsibility for their health in the extent they can influence it by their actions.

Czech healthcare is on a very good level. Maintaining and further improving it is fundamentally related to supporting and applying research, both basic and applied. Science and research contribute to the elucidation of the origin and development of diseases, give rise to new diagnostic and therapeutic methods and prevent the most serious diseases or contribute to the prevention of epidemics. The use of research results leads to the introduction of innovative methods and procedures in healthcare and further contributes to improving the health condition of the population.

With respect to these challenges and current trends, the overarching objective of the Czech Republic 2030 Strategic Framework, consultation with the professional public and an analysis of the current state and needs of the Czech healthcare system, the following strategic objectives were formulated:

1. Protection and improvement of the health of the population

The health status of the population is an important indicator of quality of life in the CZ. Given the experience in dealing with the COVID-19 pandemic, the need to support and develop an epidemiological alert system is becoming increasingly important. It is also necessary to focus on citizens' interest in their own health through activities to increase health literacy, to support a healthy lifestyle and disease prevention. The pursuit of this objective will also include a reform of the existing model of primary care, where the role of GPs should be strengthened, thus contributing to increased access to healthcare.

2. Optimization of the healthcare system

Insufficient development of the health system and its non-adaptation to current trends would have an impact not only on the health of citizens, but also on the overall expenditure on health and the economy. The aim is therefore to increase the efficiency, economy and sustainability of the system, in particular by stabilizing healthcare staff and addressing their local and regional deficit, promoting the integration of health and social care, with an emphasis on continuing the reform of psychiatric care where there is an effort to shift the focus of care to the community with an emphasis on support for the emergence of long-term care services and coordinated rehabilitation services, support for healthcare digitalization and optimization of the reimbursement system in healthcare. Resources intended for healthcare should gradually reach the average level in developed countries účinnost, hospodárnost i trvalou udržitelnost systému, zejména pomocí .

3. Support for science and research

Science and research in healthcare contributes greatly to improving the health of the population by helping to clarify the origin and cause of many diseases and to provide new diagnostic and therapeutic methods and tools to help patients diagnose, manage or treat various diseases. The main objective here is to ensure a comparable

level of health research to developed EU countries and at the same time to help meet the needs of healthcare in the Czech Republic by disseminating its results. Priorities in the field of science and research in healthcare are based on the priorities of the National Policy for Research, Development and Innovation of the Czech Republic 2021+, under the auspices of the Government Council for Research, Development and Innovation.

1.2. International context

The Czech Republic is a member of many international organizations, the **World Health Organization** (WHO) being the most important in terms of the Ministry of Health. The WHO is an agency of the United Nations and its primary role is the management and coordination of international health.

The main areas of WHO intervention are health systems, communicable and non-communicable diseases, surveillance, preparedness and response to health threats. The Czech Republic, along with other Member States of the WHO European Region, supported by the WHO Regional Office for Europe, the United Nations Environment Programme (UNEP), the UN Economic Commission for Europe (UN/ECE), the EU and other intergovernmental organizations and NGOs and UN agencies, has committed to strengthening and developing measures to improve the environment and health through the Declaration of the Sixth Ministerial Conference on Environment and Health (the so-called Ostrava Declaration), which took place from 13 to 15 June 2017 in Ostrava, Czech Republic.

The Ostrava Declaration is the main policy document of the so-called European Environment and Health Process (EEPR) and defines a common European policy in key areas of the environment and health after 2020, in line with the objectives of the UN 2030 Agenda for Sustainable Development.

In accordance with the Ostrava Declaration, WHO Member States have established national portfolios of actions that focus on individual priorities and WHO will measure the progress of the countries in meeting these prescribed targets. The expert group, composed of representatives of the Ministry of Health, the Ministry of the Environment and, where appropriate, in cooperation with other stakeholders, will review the measures to reduce the negative health impacts associated with environmental factors contained in the National Portfolio of Actions each year. The measures contained in the national portfolios of actions are based on the following seven priorities of the Ostrava Declaration:

- (1) improving indoor and outdoor air quality;
- (2) access to safe drinking water and sanitation;
- (3) minimizing the adverse effects of chemicals on human health and the environment;
- (4) preventing and eliminating the adverse impacts of waste management and securing contaminated sites;
- (5) enhancing resilience to health risks related to climate change and supporting measures to mitigate climate change in line with the Paris Agreement;

(6) encouraging cities and regions to become healthier, safer and more sustainable;

(7) building environmentally sustainable health systems and reducing their impact on the environment.

1.2.1. Sustainable Development Goals

In June 2012, a United Nations Conference (the Rio+20 Conference) was held in Rio de Janeiro, where the formulation of **Sustainable Development Goals** (hereinafter “SDGs”) commenced and in which all the UN Member States, representatives of civil societies, businesses, the academic community and citizens from all continents participated. The 17 SDGs represent a fifteen-year development programme (2015-2030) and build on the successful Millennium Development Goals (MDGs) agenda.

In 2015, at its meeting in New York, the United Nations General Assembly adopted the Sustainable Development Agenda (hereinafter “2030 Agenda”), which is a new programme of global development until 2030 and includes the final form of the SDGs.

There are seventeen major SDGs divided into a total of 169 sub-goals.



Figure n. 1: 17 SDGs for sustainable development

With the adoption of the 2030 Agenda, the Czech Republic is committed to monitoring the fulfilment of individual sub-goals. The area of healthcare is addressed by **SDG 3: “Ensure healthy lives and promote well-being for all at all ages”**, though not all of the sub-goals are relevant for the CZ. The main administrator of this goal is the MoH and the co-administration was entrusted to the departments of the MoA, MoE, MEYS, MFA, MoI, OG and the MIT. The Czech Republic 2030 Strategic Framework, based on the 2030 Agenda, is part of a joint effort for the sustainable development of the European Union (hereinafter referred to as the “EU”) as well as a contribution of the Czech Republic to the fulfilment of SDGs. These global goals are common, but each state, given its specifics, decides what specific content they should have and how they can be achieved.

In general, the strategic documents of international organizations place a strong emphasis on prevention and promoting the health of the entire population and at the same time on the high sustainability and efficiency of the healthcare system. The 2030 Agenda sets concrete objectives for improving the health of the population and universal access to quality health services.

Overlapping of SDGs and specific objectives of the CZ 2030 Strategic Framework⁵

Sustainable Development Goals	Czech Republic 2030 Strategic Framework (key area, specific goal)
Goal 1. End poverty in all its forms everywhere	People and society 3.1, 3.2, 3.3, 3.4 Global development 21.1
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Economic model 9.4 Resilient ecosystems 12.3, 13.1, 13.2, 15.1, 15.2, 15.3
Goal 3. Ensure healthy lives and promote well-being for all at all ages	People and society 5.1, 5.2, 5.3, 5.4, 5.5 Economic model 9.1, 10.6, 11.2 Resilient ecosystems 12.1, 12.3, 12.4, 12.6, 14.2 Municipalities and regions 16.3, 17.4, 18.2, 19.2, 19.4, 19.5, 19.6 Good Governance 25.1
Goal 6. Ensure the availability and sustainable management of water and sanitation for all	Economic model 10.6 Resilient ecosystems 14.2

European Policy for Health and Well-being Health 2020 (EUR/RC62/R4)

Health 2020 is a policy framework on health adopted in the WHO European Region in 2012, which emphasizes improving the health and well-being of the population, reducing health inequalities and strengthening the role of public healthcare. The aim is to create a sustainable health system based on quality, availability and the principle of the equal status of people as partners in achieving better health for all. The main motivation is to reduce the burden and prevent communicable and non-communicable diseases such as cardiovascular diseases, cancer, chronic obstructive pulmonary diseases and diabetes, which account for almost 90% of deaths and 84% of patients in Europe and increase the burden on the population, health systems and overall economic development. The development of health literacy, which should be taken into account in all health promotion measures, is an integral

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From the Implementation of the 2030 Agenda in the Czech Republic.

part of Health 2020. The fulfillment of Health 2020 is dealt with in the “*European Health Report*” published every three years by the WHO European Office.

Roadmap for the implementation of the 2030 Sustainable Development Agenda, based on the European policy for health and well-being Health 2020 (EUR/RC67/9)

This roadmap proposes five interlinked strategic orientations, namely promoting health and the governance and management of well-being; excluding no one; disease prevention and attention to health determinants by supporting cross-sectoral policies throughout life; creating healthy places, environments and resilient communities; strengthening health systems for universal health coverage/access to healthcare.

The roadmap also proposes four measures to support the implementation of the 2030 Agenda, which are health investments, multi-partner cooperation, health literacy, research and innovation, and monitoring and evaluation.

1.2.2. European Union

The EU is also implementing the 2030 Agenda. The European Commission is committed to assisting Member States in meeting the Agenda's milestones, including the fight against non-communicable diseases and the provision of quality healthcare.

In June 2017, the EU issued a **Joint Statement by the Council and the Representatives of the Governments of the Member States sitting in the Council, the European Parliament and the Commission titled A NEW EUROPEAN CONSENSUS ON DEVELOPMENT "OUR WORLD, OUR DIGNITY, OUR FUTURE" (2017/C 210/01)**, the primary purpose of which is to provide a framework for a common approach to development policy to be applied by EU institutions and Member States, while fully respecting their respective roles and powers.

The document states that in the field of healthcare, the EU and its Member States will continue to invest in the prevention of and fight against communicable diseases such as HIV/AIDS, tuberculosis, malaria and hepatitis, and will help to ensure access to affordable basic medicines and vaccines for all. They will encourage research and investment in and the development of new health technologies. They will take action to address global health threats such as epidemics and antimicrobial resistance through an approach focused on public health⁶.

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: The next steps for a sustainable European future, European action for sustainability (COM(2016)739)

In the context of SDG 3: “*Ensure healthy lives and promote well-being for all at all ages*”, the EU complements Member States' actions through legislation and other initiatives on public health, healthcare systems and environment-related health problems (including air quality, chemicals and waste). The Commission will assist Member States in meeting the SDGs milestones, in particular in reducing chronic disease mortality, ensuring quality healthcare,

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<https://eur-lex.europa.eu/legal-content/CS/TXT/PDF/?uri=OJ:C:2017:210:FULL&from=EN>, p. 7.

strengthening the capacity to prevent and manage global health threats (including antimicrobial resistance), the eradication of HIV/AIDS and tuberculosis (and the reduction of hepatitis) and the implementation of the World Health Organization Framework Convention on Tobacco Control.

The future direction of the whole EU is politically outlined in the **White Paper on the Future of Europe**.

In its **Communication on Effective, Accessible and Resilient Health Systems of 2014**, the European Commission identified priority areas for cooperation, such as quality and integration of care, performance assessments of healthcare systems, health technology assessment (HTA), health information systems and eHealth. In addition, the priority area of secondary prevention in the Member States is backed by a specific **EU Council Recommendation of 2003 on cancer screening**, which is a comprehensive EU Council recommendation for Member States on the **implementation of early cancer detection programmes**. The EU Council especially recommends that Member States offer cancer screening **based on scientific evidence** through a **systematic population approach guaranteeing quality at all relevant levels**.

The Commission invites Member States to use European funding instruments when implementing the reforms mentioned in these recommendations.

Communication from the Commission on Effective, accessible and resilient health systems (COM(2014)215)

The 2013 Annual Growth Survey acknowledged that *"in the context of the demographic challenges and the pressure on age-related expenditure, reforms of healthcare systems should be undertaken to ensure cost-effectiveness and sustainability, assessing the performance of these systems against the twin aim of a more efficient use of public resources and access to high quality healthcare."* The ability of Member States to deliver high quality care to all will in the future depend on increasing the resilience of healthcare systems and improving their ability to cope with the challenges they face. Healthcare systems must remain cost-effective and fiscally sustainable. While this is primarily a challenge for Member States, the Communication highlights a number of initiatives through which the EU can support policy-makers in Member States.

The Communication focuses mainly on the following key areas:

- **Increasing the efficiency of healthcare systems**
 - Areas where the contribution of healthcare systems to health improvement is most visible, using indicators available across the EU, such as perinatal and avoidable mortality, communicable diseases and the incidence of diseases preventable by vaccination or cancer screening.
 - Support for increasing the efficiency of healthcare systems through the evaluation of the performance of healthcare systems (HSPA), quality of care, including patient safety, and integration of the provision of care .
- **Improving the accessibility of healthcare systems**
 - Access to healthcare is the result of the interaction of various factors such as health insurance coverage, care package (depth of coverage), affordability of care (participation, cost sharing) and availability of care (healthcare professionals, distance, waiting times). The goal will be local and temporal access to healthcare for inhabitants, with an emphasis on developing programmes for the excluded,

homeless, dependent, and other vulnerable groups, so that basic medical and dental care is available.

- Support for increasing access to healthcare through the optimal implementation of Directive 2011/24⁷ on the cost-effective use of medicines or movement of healthcare professionals within the EU.
- **Increasing the resilience of healthcare systems**
 - Resilience factors are stable funding mechanisms, reliable risk adaptation methods, good governance, information flows in the system, proper costing of healthcare services and health professionals with the appropriate skills and adequate abilities.
 - Supporting the increasing resilience of healthcare systems through Health Technology Assessment (HTA), a health information system or eHealth.

In addition to the aforementioned documents, documents from the area of **cohesion policy**, which is the main investment policy of the EU, through which the Czech Republic has the possibility to draw EU funds, are also relevant for the health sector.

EU funds are one of the tools used to meet the EU's objectives and help reduce disparities between Member States and regions. Thus, Member States must correctly identify problem areas preventing faster socio-economic development, while also identifying priorities where European investment will then be concentrated.

In order to ensure maximum efficiency in the use of EU funds in strategic areas that will ensure the desired change and shift of the EU towards greater competitiveness and quality of life of its citizens, five clearly defined policy objectives were identified in the “**General Regulation**”⁸ currently being approved for the use of EU funds in the 2021-2027 programme period:

- A smarter Europe – an innovative and intelligent economic transformation;
- A greener, low-carbon Europe;
- A more connected Europe – mobility and regional connectivity to ICT networks;
- A more social Europe – implementation of the European pillar of social rights;
- A Europe closer to its citizens – sustainable and integrated development of urban, rural and coastal areas through local initiatives.

The goal of a More Social Europe is especially relevant for the health sector – the implementation of the European pillar of social rights, which also defines the relevant areas

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Directive [2011/24/EU](#) of the European Parliament and of the Council of 9 March 2011 on the application of patients' rights in cross-border healthcare.

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The Regulation of the European Parliament and of the Council laying down common provisions on the European Regional Development Fund, the European Social Fund plus, the Cohesion Fund and the European Maritime and Fisheries Fund and on the financial rules applicable thereto and on the Asylum and Migration Fund, the Internal Security Fund, and the Border and Visa Management Tool.

of intervention that can be supported⁹. The European Commission has also demonstrated the relevance of health sector support in the analysis of the economic challenges and policies for each EU Member State, the so-called Country Report, which was published on 27 February 2019. The report is complemented by Annex D on the possible use of EU funds as the EC's input into the dialogue with Member States on cohesion policy after 2020.

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The condition for drawing resources from EU funds is the fulfillment of the so-called basic condition according to Article 11 and Annex IV of the aforementioned regulation, which is currently defined for the field of health and healthcare, as amended by the European Commission proposal of 29 May 2018 as follows:

"A national or regional strategic health policy framework shall be established, which shall include:

1. The mapping of healthcare and long-term care needs, including those of healthcare and long-term care staff, in order to ensure sustainable and coordinated measures,
2. Measures to ensure the effectiveness, sustainability and availability of healthcare and long-term care services, including a special focus on those excluded from healthcare and long-term care systems,
3. Measures to support community-based services, including prevention and primary care, and home and community care services."

2. Analytical Section:

2.1. Objectives of the analytical section and data sources

The analytical section of the Health 2030 Strategic Framework summarizes the main findings of the analytical breakdowns of available national and international data sources, in particular data from demographic and health registers and comparative statistical surveys. The results of the analyses are graphically and tabularly presented in the analytical annex of the Health 2030 Strategic Framework (hereinafter referred to as the “*Analytical Study*”), which divides the outputs of the analyses into chapters describing the health condition of the Czech population, the main determinants of the health condition of the population, morbidity and the prediction of its likely development, and the structure and capacity of the health services system in the Czech Republic.

The analysis is designed to describe the main factors determining the state and future development of the morbidity of the Czech population, the strengths and weaknesses of the health system and the main conclusions resulting from relevant international recommendations. Significant attention is paid to the justification of the specific objectives of the Health 2030 Strategic Framework, supported by data.

Data sources of the National Health Information System (hereinafter referred to as the “*NHIS*”) were primarily used for the Analytical Study of the Health 2030 Strategic Framework. The NHIS is a unified national public administration information system in which data is collected and processed from basic registers of public authorities, ministries, health service providers or other persons transferring data to the NHIS¹⁰.

The source of demographic data is the output of the Czech Statistical Office (hereinafter the “*CSO*”). These data cover the main demographic characteristics of the Czech population, in particular the total population, a detailed age structure, life expectancy characteristics and, for example, a projection of the development of the age structure of the Czech population until 2050.

Data on the availability of social and health-social services are drawn mainly from the annual report on social services – Soc (MPSA) V 1-01: social service providers, which are defined in Section 6 of Act No. 108/2006 Coll., on Social Services.

The most important sources of international data include European sample surveys:

- **European Health Interview Survey (EHIS)**

The European Health Interview Survey (EHIS) is an important part of health statistics internationally. The implementation of this survey is obligatory for EU countries under Regulation (EC) No. 1338/2008 of the European Parliament and of the Council on statistics of the Community in the area of public health and health and safety at

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The procedure and conditions of administration and access to this data are comprehensively regulated in Section 70-78 of Act No. 372/2011 Coll., On health services, as amended, and its implementing regulations, in particular Decree of the Ministry of Health No.116/2012 Coll., on the Transfer of Data to the National Health Information System, or Decree No. 373/2016 Coll., on the Transfer of Data to the National Health Information System (effective from 1 January 2017).

work. The first wave of EHIS surveys was carried out according to a uniform methodology on a voluntary basis in 2006–2009 and the second wave between 2013 and 2015 in all of the EU28 countries.

- **European Health Examination Survey (EHES)**

The sample survey of the health status of the European population with a medical examination is focused mainly on cardiovascular diseases. The monitoring of selected indicators is one of the indicators proposed by the WHO to meet the objective of reducing premature mortality rates from chronic diseases by appropriate preventive activities. The task of the EHES is thus to monitor the situation in the population and to provide the information needed to improve health, reduce the cost of treating diseases and their complications, and increase the productivity of the economically active population. The main methodology specialist for performing examinations with venous blood testing within Europe is the Coordination Centre for the Implementation of the EHES, the Institute for Health and Welfare (THL) in Helsinki. The survey is carried out in about 15 European countries.

Additional data sources are cited for the relevant analytical outputs in the attached Analytical Study.

2.1.1. Integral indicators of the population's health status

According to the WHO definition (1948, known as the biopsychosocial model), *"health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."* The aforementioned definition is based on the presented concept of analyses of population health indicators, which includes not only the epidemiological characteristics of diseases, but also quantifies the influence of healthy lifestyle factors and subjective perception of the health status by citizens. However, the integral health indicators, such as average life expectancy and healthy life expectancy, are of particular importance. The following paragraphs briefly summarize the selected conclusions of these analyses, which show a number of positives for the Czech population and the healthcare system, especially if we compare developments over the last ten or more years. On the other hand, a number of indicators have yet to reach the level of developed countries in Europe and the submitted Health 2030 Strategic Framework is therefore targeted at their further improvement:

- **Life expectancy according to the year of birth** in the Czech population has been increasing in the long term. Nevertheless, the values found for both Czech women and men are lower than the EU average. In 2017, the average life expectancy at birth for women was 82.0 years, which is 1.8 years more than in 2007, but 1.5 less than the EU average in 2017. For men in 2017, the average life expectancy at birth was 76.1 years, 2.3 years more than in 2007 but 2.2 less than the EU average for 2017.
- In terms of healthcare, **healthy life expectancy** is an important parameter; the Czech Republic improved significantly in this parameter between 2006 and 2016. The positive thing is that the healthy life expectancy of the Czech population surpasses almost all of the countries of Central and Eastern Europe. Nevertheless, these values are still lower than is typical for the populations of developed EU countries. The

positive development in life expectancy and healthy life expectancy is clearly a result of improving healthcare in the Czech Republic.

- **Overall mortality** shows a slightly increasing trend over the 2010-2017 period, largely due to the aging of the population. In total, 62% of all deaths in the Czech Republic are deaths of long-term ill patients without acute causes. This share represents 66.6 thousand patients annually who may potentially need long-term or palliative care. Most major and internationally monitored mortality parameters show improving values in the Czech Republic over time.
- **Premature deaths.** According to the EUROSTAT methodology, some deaths can be considered premature or preventable (e.g. deaths from *diabetes mellitus* up to 49 years of age are described as premature according to this methodology.) This methodology defines 25.9% of all deaths in the Czech Republic in the years 2007–2017 as premature. The premature mortality rate in the Czech Republic is not as high as in Lithuania, Hungary or Latvia, but it is still well above the EU average and cannot compare to Western European countries. Although demographic aging is a major contributing factor in population morbidity, a poor lifestyle and risk factors such as alcohol consumption, tobacco use, poor eating habits, etc., also have a large influence. In the Czech Republic, the mortality rate from preventable diseases is significantly higher (285 per 100 000 inhabitants) than the EU28 average (216 per 100 000 inhabitants).
- Especially in the last decade, there has been a **slight decrease in premature deaths**. Their share in male and female mortality is decreasing accordingly. The largest proportion of premature deaths in the Czech Republic is from coronary artery disease (7% of the total number of deaths), followed by malignant neoplasms of the lungs (3.7%) and trauma (2.7%). For men, the proportion of premature deaths is 31.9% of the total number of deaths, while for women it is only 16.7%. The significant imbalance between men and women in the proportion of preventable deaths will be largely due to lifestyle, and is therefore considerably influenceable by increasing health literacy and through effective prevention programmes.

Subjective perception of health status. The Czech population subjectively perceives its health status as good to very good in a relatively high percentage of cases, i.e. more than 60%. Although this is a high proportion of the population, it is still slightly below average compared to developed EU countries. Positive self-assessment declines sharply with age and reaches only 24% for those over 65 years of age.

The basic indicators of population health undoubtedly include **indicators of the population's reproductive health**. Prenatal care for pregnant women has long been at a high level in the Czech Republic. This is illustrated, for example, by the timing of the first pregnancy visits to a GP – gynecologist. More than 80% of women undergo their first examination between the 1st and 12th week of pregnancy. The following can be selected from other indicators of this population health segment:

- The **infant mortality** rate, i.e. the number of deaths in children under the age of one per 1000 live births, in the Czech Republic is one of the lowest compared to European countries. Since 1985, the infant mortality rate in the Czech Republic has been lower than the EU average.
- **Birth weight** is one of the basic indicators of the newborn's viability and largely determines its postpartum adaptation. The proportion of children with a low birth

weight below 2500 g (“*premature*”) has been decreasing slightly in recent years, but it remains above 7% of births. Risky births, i.e. births of children with a low birth weight, are highly centralized in the Czech Republic to perinatal and intermediary centres. This is a very positive phenomenon which significantly contributes to the quality of care for these children.

At the same time, the Czech Republic outperforms the economies of Central and Eastern Europe in terms of **overall healthcare outcomes**, such as survival rates following hospitalization due to ischemic strokes. The overall hospital mortality rate in the Czech Republic is relatively low and does not exceed 3%. It is a value that is constant over time, varying between 2.7% and 2.9%. The improving healthcare outcomes in the Czech Republic are best illustrated by international comparative studies quantifying survival rates in cancer patients. The EURO CARE-5 study, published in 2014, brought positive news for Czech oncology. The success rate of cancer treatment is generally increasing, and for most diagnoses, five-year relative survival values are close to or just below the European average. At the same time, they are significantly above the values achieved in other states of the former Eastern Bloc. Significant positive trends are observed especially in patients diagnosed with malignant neoplasms of the prostate, kidney, and in patients with malignant neoplasms of the colon and rectum, in patients with malignant neoplasms of the breast, malignant melanomas of the skin and malignant tumors of the thyroid gland.

The temporal development of the values of the aforementioned population health indicators can be clearly interpreted as a result of the improving level of healthcare in the Czech Republic. At the same time, it is important to stress that there is significant room for further improvement in a number of indicators, and this challenge does not only mean an absolute improvement in population average values. From this point of view, the **variability of the indicator values between the regions of the Czech Republic is also very important**. These differences relate also to such an important parameter as average life expectancy at birth:

- The highest average life expectancy at birth for both men and women was found in the capital city of Prague in 2016–2017 (men 78.1 years, women 82.7 years). On the other hand, the lowest life expectancy at birth was, in the case of both men and women, in the Ústí nad Labem Region (men 74.1 years, women 79.8 years). The difference between the highest and lowest life expectancy is four years for men and almost three years for women.
- The differences between the regions of the Czech Republic are fundamental and statistically significant. Average life expectancy values may indicate lifestyle problems, the insufficient prevention of serious diseases and also the differing availability of healthcare in some regions. It is a factor worthy of consideration when forming health policies and strategies in individual regions.

Compared to most other EU countries, the availability of medical care in all regions is relatively high, therefore differences in health outcomes most likely reflect regional differences in socio-economic conditions. The average life expectancy correlates significantly with the registered unemployment rate and the share of the population with only a basic education. However, the number of outpatient or hospital physicians shows only a weak positive correlation with life expectancy, which reflects the overall high availability of medical care across regions.

Understanding the factors that cause regional differences in health outcomes is important for developing targeted policy-driven solutions. The OECD's work to date on the effectiveness of the healthcare sector in different countries has led to the finding that governance systems and institutional elements as well as lifestyle and socio-economic characteristics are the main explanatory factors. All regions within the same country are subject to the same framework conditions – such as institutional arrangements, legislation and other regulations – so different health outcomes are likely to stem from structural differences. Targeted policies need to be developed depending on what factors lead to differences in health outcomes. For example, if the observed variations in health outcomes result from socio-demographic characteristics, policies aimed at increasing the health literacy of vulnerable population groups may lead to more balanced outcomes¹¹.

The average life expectancy varies significantly across the 77 districts of the Czech Republic. The geographical coverage of health service providers is evenly distributed. Therefore, differences in health outcomes are likely to reflect the differing quality of services, population health, lower health literacy or the prevalence of behavioural risk factors. For these reasons, the inter-ministerial focus on a number of specific objectives of the presented Health 2030 Strategic Framework is of great importance, particularly the integration of the health, health-social and social service sectors.

The study of differences in the health status of the population between regions of the Czech Republic revealed, as one of the other very influential determinants, the **uneven regional development of the social and demographic composition of the population**, or more precisely, asymmetric domestic population migration.

- The analysis of trend changes in 2010–2016 shows a different development in the number of inhabitants in individual parts of the Czech Republic. The Silesian region is decreasing in population (in 2016 the population was lower than in 2010); the same development is observed in the regions of Bohemia, with the exception of the Central Bohemian Region and the capital city of Prague.
- Population migration in the Czech Republic between 2016 and 2010 has a positive balance, especially in the vicinity of large cities, although the development is not the same in all regions. When comparing regional cities, there is an increase in the number of inhabitants in Prague and its surroundings, Brno, Liberec, Pilsen and Olomouc. The towns of Zlín, Pardubice, Jihlava, České Budějovice, Hradec Králové, Karlovy Vary, Ústí nad Labem and Ostrava have a negative balance in population. It can be expected that without state intervention to retain the population in smaller towns, there may be excessive pressure on health services in some regional towns where the migration balance is positive. This applies in particular to Prague, where health services are also largely used by inhabitants of Central Bohemia and other regions. As a result of interregional migration, the share of university educated people in the regions of the Czech Republic is very unevenly distributed, which may

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OECD Economic Surveys: Czech Republic 2018.

indirectly negatively affect the availability of healthcare (problems with the available capacity of physicians in regions with a low proportion of university graduates).

- The average life expectancy in the districts of the Czech Republic correlates significantly with the registered unemployment rate and the share of the population with only basic education. The results of the analyses carried out so far show the importance of preventive and health literacy programmes, especially in socially disadvantaged groups.

2.1.2. Factors determining future healthcare needs

This chapter briefly summarizes the main factors directly or indirectly determining the health status of the Czech population and defining the future development of needs. Detailed information on selected factors is described in the sections dedicated to the specific objectives of the Health 2030 Strategic Framework in relation to the planned measures.

The most important factor by far is the **aging of the Czech population**. The structure of the population with a high proportion of the elderly, both men and women, is an important factor determining the future development of Czech healthcare and the expected needs of health and social services. The average age of the population of Czech men is 40.8 years, for women 43.6 years. The proportion of people over 60 is approximately 25%. Demographic predictions show that there will be a significant increase in the proportion of the population over the age of 60 and over the age of 65 in the next thirty years. This development will inevitably entail a higher morbidity typical of the elderly population. In this context, population models point to an expected increase in the number of patients with cancer, circulatory, musculoskeletal and connective tissue diseases, and diabetes. The growth of the number of sick elderly people with neurodegenerative diseases (dementia, Alzheimer's disease, etc.) will also be important. This substantial part of the population will need long-term and almost round-the-clock health and social care. The future demographic development of the Czech population will thus be a challenge for the palliative medicine segment, as well as for the segment of end-of-life health and social services.

- The age index expresses the number of elderly people aged 65+ per 100 children aged 0–14 years. In the aging Czech population, the value of the age index has increased significantly over the long term, even though the proportion of persons aged 0-14 rose slightly after 2007. However, the proportion of elderly people over 65 is growing consistently and more significantly than the proportion of children. Long-term predictions also evidence a continuation of the aging of the Czech population.

The relative structure of the population of the Czech Republic clearly shows three crucial age classes, the further shift in time of which will have a significant impact on the healthcare system. It is a very numerous class of the population aged 40-50 and especially 30-40. These population categories will reach the age of sixty and over in the next fifteen, respectively 20-25 years, and will inevitably increase the need for health and social services. Very significant is the decline in the population aged 10–25, which, together with the shift in the age of mothers when 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 offered health and social services will further intensify the **predicted lengthening of the average life expectancy**. According to the CSO demographic projection, life expectancy at birth will increase and should reach 82.1 years for men and 86.7 years for women in 2050. This positive development must be supported by increasing health literacy and citizens' responsibility for their health. It is necessary to extend healthy life expectancy along with average life expectancy. However, longer life expectancy will also bring a new dimension of the health problems of an aging population.

As an example, it is possible to name a significant epidemiological trend that will fundamentally increase the oncological burden of the population in the future, namely the incidence of multiple malignancies in cancer patients. The significantly improving outcomes of anticancer treatment lead to the considerably longer survival of cancer patients, and these are increasingly likely to become ill with other primary tumors. This secondary cancer incidence already accounts for nearly 18% of the total incidence of malignant neoplasms. The increasing incidence of subsequent malignant neoplasms in patients already treated for cancer affects all tumor groups. A very important finding is that a significantly high proportion of subsequent malignancies in cancer patients are still detected in advanced stages, despite sufficient time for their early detection. This situation calls for changes in the organization of cancer care and for increased screening in cancer patients.

The impact of aging already represents a challenge for the **capacity to provide both long-term care and aftercare**. The demand for long-term care has increased in the Czech Republic in recent years. The current organization and funding of long-term care is not ready to absorb such an increase in demand.

The social and health aspects of long-term care have different organizational and funding structures (MoH and MLSA). Despite efforts to strengthen cooperation between the two ministries to optimize the effectiveness of patient care, there are substantial funding differences that create negative incentives when utilizing hospital facilities. Residential long-term care facilities and other social services are financed from the central, regional or municipal budget, while long-term inpatient care providers are mainly financed through health insurance.

Insufficient coordination and the differing reimbursement of healthcare provided in hospitals and long-term social care facilities contribute to the inefficient use of hospital and residential care services. For example, in the case of health services, patients' fees have been abolished, while in the case of social care there are fees for accommodation and food, and this motivates patients to seek long-term care in more costly healthcare facilities rather than social care. This has led to the overuse of long-term bed care. The occupancy rate of these hospital beds is very high. One of the reasons for the high average length of hospitalization may be the lack of vacancies in residential social care facilities. This situation is further aggravated by the reimbursement policy, which is more favourable in the healthcare system and is based on daily reimbursement, motivating longer hospitalization.

The development of care facilities needs to be encouraged and the policy on reimbursement of healthcare provided in hospitals and other institutions should be harmonized. It is appropriate to motivate regional authorities to ensure a sufficient number of long-term care institutions in their territory, taking into account future developments. The development of comprehensive home care offers an alternative to hospitalization. Home care is nursing care, medical rehabilitation care or palliative care provided to patients in their own social environment. It is a medical service provided by general nurses on the basis of a physician's indication and paid by health insurance companies. The development of comprehensive

home care should be favoured as an alternative to long hospitalization. The level of the social care allowance should take into account the need to ensure that individuals wishing to enter a social care facility can afford to do so. In order to limit the excessive increase in the costs of social care facilities, contractual pricing policies can be set up.

2.2. Analytical rationale for specific objectives of the Health 2030 Strategic Framework

The specific objectives of the Health 2030 Strategic Framework have been set with regard to the current needs and weaknesses of the healthcare services system in the Czech Republic. The main objectives and related activities are based on an audit of available Czech healthcare data sources and international comparisons that clearly showed room for improvement in the organization, availability and performance of the network of providers. However, the objective conclusions of analytical studies do not only concern the organization of care, but are a call to change the attitude of the Czech population regarding taking responsibility for their own health and a strong incentive to strengthen health literacy. This chapter summarizes the main conclusions of the analytical study of data in the form of a rationale of the need and relevance of the set objectives of the Health 2030 Strategic Framework.

2.2.1. Specific Objective 1.1 – Primary care reform

This specific objective pursues, in particular, the gradual transformation and strengthening of primary care so that it is able to provide the widest possible range of care, while still maintaining a high quality and remaining easily accessible to the patient. Although this is mainly about empowering and extending the competencies of medical practitioners, the reform will in fact bring a gradual reconstruction of the capacities of the entire outpatient care segment, including outpatient specialists.

The newly available data of the National Health Information System, in particular the National Register of Healthcare Workers and the National Register of Health Service Providers, demonstrate the urgency of fulfilling this specific objective and the significant positive potential of its set objectives. Although the total number of physicians in the Czech Republic has been slightly increasing over the past twenty years, the problem is the uneven distribution of their capacities and, among general practitioners, their high age in approximately 30% of outpatient clinics. Although the number of physicians is currently relatively high, their high average age may soon lead to a reduction in supply that will affect the coverage and quality of care. While the annual production of Czech medical faculties currently covers the number of physicians leaving for retirement, the annual positive addition to the system consists of only +250 to +350 full-time physicians, a significant part of whom are absorbed by acute bed care.

The analyses carried out on the segment of outpatient service providers in 2016–2018 led to the following main conclusions:

- There is a long-term imbalance in the capacities of different types of outpatient care providers in the Czech Republic, to the detriment of the capacities of general practitioners. The significantly high proportion of outpatient specialists vs. the low and declining capacity of GPs has been repeatedly mentioned as a critical point of Czech healthcare in comparative analyses by the OECD, EUROSTAT and WHO.
- Variations in the available capacity of outpatient specialists and general practitioners differ significantly between regions of the Czech Republic; a very high proportion of outpatient specialists is apparent in large cities, especially in Prague and Brno. A major problem is the small and declining availability of GPs in smaller settlements (<2000 inhabitants) and less attractive areas of the country. The density of physicians

per 1000 inhabitants is 5.7 in urban areas and 4.2 in rural areas, where, moreover, general practitioners are often closing their offices, especially in small settlements.

A significant imbalance of the capacities and services provided between GPs and outpatient specialists was also quantified by a general analysis of patient visits (number of contacts):

- The number of outpatient visits for outpatient specialists increased over time until 2015, when it levelled off at about 63 million per year. The average annual number of such visits per patient is approximately 7.5, which is highly above average in international comparison. The services of outpatient specialists in the Czech Republic are obviously consumed above the average and largely substitute for the role of primary care, and therefore general practitioners.
- Although the average number of patient visits to GPs has grown over time (from 2.4 in 2010 to 3.1 in 2017; an incremental change occurred in 2014 after the abolition of regulatory fees), it still is less than half the number of visits to outpatient specialists. This comparison shows that the key role of the GP is not sufficiently fulfilled in the Czech healthcare system.

The situation is complicated by the overall demographic development of the population of Czech physicians, who are demographically aging very rapidly. Almost more than 28% of physicians are over the age of 60. This situation is most noticeable in the GP segment. In the 2015-2017 period, a beginning trend of a declining number of active general practitioners' offices for adults due to their retirement can be observed. The annual decline is on average 0.5% to 1.5% (calculated against the number of service providers). The situation in the segment of general practitioners for children and adolescents is even more serious; here the average age has reached sixty years. The data available here also show a trend of decreasing active general practitioner offices due to retirement. The average annual loss is 1.7% to 3.3%. The age of physicians who closed their outpatient practice in 2017 is relatively high (median 61-63 years) and the closed offices were typically in operation for a long time (36-37 years).

The need for a reform of primary care is also illustrated by available international comparisons. Between 2000 and 2015, the proportion of physicians over 55 increased from 20% to 37%, making it one of the highest in the OECD. The structure of physicians providing basic and specialized primary care is also unbalanced in international comparison, since there are considerably fewer general practitioners than specialists. According to internationally available data, only 19% of physicians in the Czech Republic are general practitioners, while the OECD average is 30%. The number of general practitioners in the Czech Republic is therefore below the international average. It is also evident that, for example, Germany is facing a similar issue in this care segment, reporting increasing problems in international statistics with the capacity of general practitioners due to their aging. Without effective preventive measures increasing the appeal of the work of a general practitioner, there is a threat of a growing number of departures of young graduates abroad.

Physicians in primary care also play an important preventive role, and the emphasis on prevention in GP offices should be increased, as it carries great positive health potential for the population, as well as having a noticeable effect on health literacy. In 2016/2017, preventive examinations in children were recorded in more than 95% of cases, however, there is a sharp decline after reaching adulthood, when preventive examinations are recorded in only 50-60% of the adult population. In total, only 63% of the population of the

Czech Republic underwent a preventive check-up with a GP in 2016/2017. Coverage of the target adult population by preventive examinations at GPs varies significantly between regions of the Czech Republic, with a range of 57-70%. However, compared to the situation in 2011/2012, an improvement of 5-10% can be observed in the adult population depending on age (in 2011/2012 only 59% of the target population of the Czech Republic underwent a preventive examination).

It will also be necessary to significantly strengthen the competencies of general nurses, on the basis of postgraduate education in the master's programme or in the postgraduate specialization, with a focus on primary care (nurse in primary care).

Region of residence	Registered office of the healthcare facility						
	Prague 1	Prague 2	Prague 4	Prague 5	Prague 6	Prague 8	Prague 10
Capital city of Prague – region	9116	4592	29	16271	4557	13589	2363
Central Bohemian Region	3856	1472	9	6618	1018	5944	341
South Bohemian Region	254	52	3	215	115	149	54
Plzeň Region	172	40		156	48	84	24
Karlovy Vary Region	162	28		130	47	73	26
Ústí nad Labem Region	653	115	2	471	170	383	81
Liberec Region	264	50		150	73	114	31
Hradec Králové Region	265	83		180	85	170	64
Pardubice Region	147	41		112	43	95	43
Vysočina	189	32	1	123	42	88	36
South Moravian Region	206	43		165	66	122	40
Olomouc Region	161	27		109	51	92	39
Zlín Region	162	34	1	118	52	68	40
Moravian-Silesian Region	346	57		269	85	196	75
Not specified	575	210		925	190	325	104

Table 1: Residence of patients of the Prague EMS – example of an analysis from NRPHS data

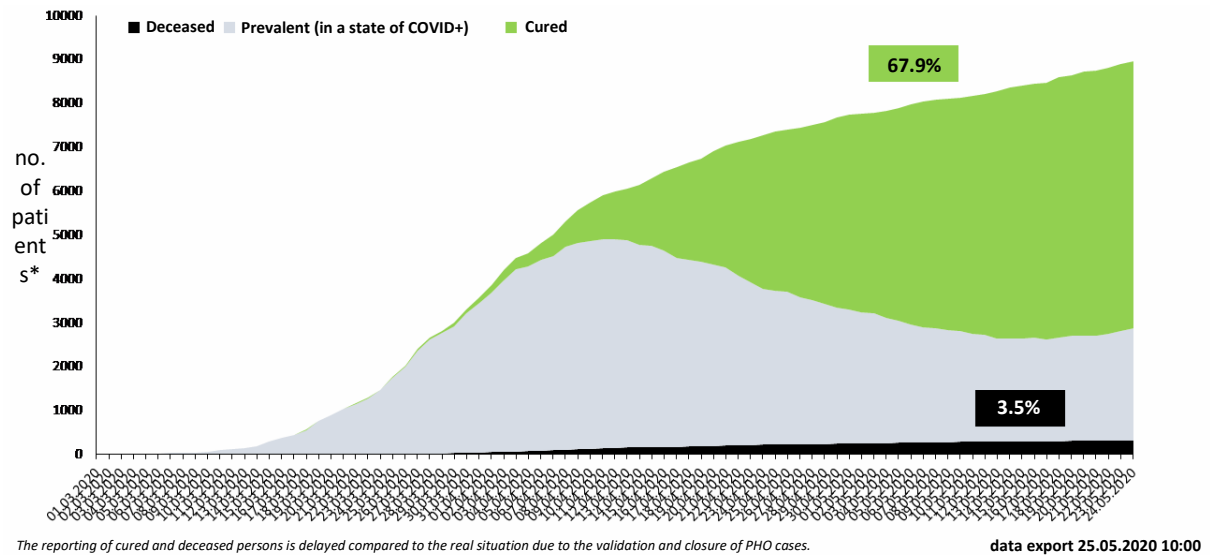
Source of data: NRPHS 2018, EMS patients are identified using the reported expertise 003 – emergency medical service and 019 – emergency dental service and/or document type 05 Billing of irregular care procedures

2.2.2. Specific Objective 1.2 – Disease prevention, health promotion and protection; increasing health literacy

The importance of this specific goal stems from available international comparisons and national statistical surveys, and an evaluation of the epidemiological situation in connection with the COVID-19 pandemic and its effects in the Czech Republic and the world.

At present, there is a growing demand for the establishment of a functional and sustainable system of epidemiological vigilance and a preparedness system of public health protection to address possible threats in the field of infectious diseases, not only the new, but also the recurring. Declining immunization coverage and growing antimicrobial resistance, together

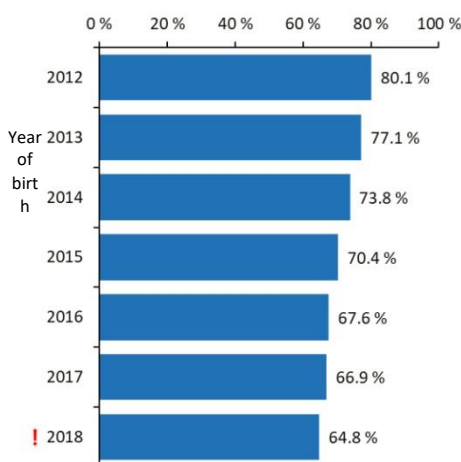
with advancing globalization and the associated movement of the population increase the risk of cross-border threats to public health.



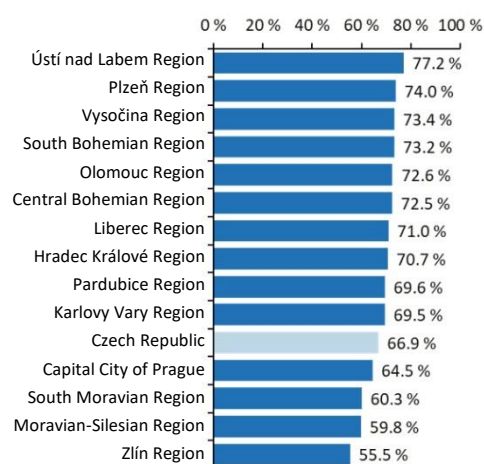
Graph n. 6: Epidemiology of COVID-19 based on data in the IDIS system as of 24 May 2020

It is clear that, in addition to new unpredictable threats, other risk factors and behaviour patterns mentioned below have a significant impact on the health of the population. The number of people in the Czech population who suffer from long-term ill health (due to chronic and incurable diseases, aging, a still relatively short life in good health) is increasing. Although demographic aging is a major contributing factor in population morbidity, poor lifestyles and a strong impact of risk factors such as alcohol consumption, tobacco use, poor eating habits, etc. also has a strong influence. The Czech Republic has a significantly higher death rate from preventable diseases (285 per 100 000 inhabitants) than the EU28 average (216 per 100 000 inhabitants).

Proportion of children born in a given year vaccinated with at least one dose of the vaccine - CZ



Proportion of children born in 2017 vaccinated with at least one dose of the vaccine



Note: The year 2018 is modeled, due to the availability of data; reports for 2019 are not closed, i.e. children born at the end of 2018 cannot be monitored in the data for the entire 7-month period.

Graph n. 3: Proportion of children born in a given year and vaccinated with at least one dose of pneumococcal vaccine in 2012–2018

Representative surveys on the level of **vaccination coverage of the Czech population** show a decreasing vaccination coverage. In the field of vaccination, there is currently also a lot of room for increasing the level of health literacy of the population. The main findings of the analyzes can be summarized as follows:

- The vaccination rates of children under the age of 2 born in 2010–2015 against pneumococcal infection are decreasing (from 85% to 73%). For children born in 2015 and vaccinated before the age of 2, a high heterogeneity of vaccination according to their region of residence can be observed.
- Vaccination rates for measles, rubella and mumps in children under the age of 2, including those born in 2010–2014, are slightly decreasing (from 97% to 93-94%). The decreasing trend in vaccination rates is apparent in all regions of the Czech Republic, however, the population in Prague has significantly lower values, i.e. 86.5%.
- Also, the vaccination rate of girls against papillomaviruses decreased significantly from 2012 to 2016 (from 76% to 63%), despite HPV vaccination reimbursement being fully available for girls between the ages of 13-14.
- The vaccination rate of elderly people over 60 years of age against influenza is 17.2% nationwide and is increasing slightly over time. However, as in the case of other indicators of vaccination, we observe considerable differences among individual regions of the Czech Republic. The lowest regional values fall below 15% and the highest exceed 19%.
- Vaccination against influenza in patients with selected diseases slightly increased in 2010-2017, but did not significantly exceed 20% in any of the monitored diseases. The most significant shift can be seen in patients with COPD (Chronic obstructive pulmonary disease, an increase from 15.5% to 20.1% since 2010).

Level of health literacy. The Czech Republic lags behind the average in European countries not only in overall health literacy, but also in individual areas of health literacy. There is a particularly unfavourable situation in the area of health promotion, i.e. the ability to obtain information on health-enhancing behaviours, and the ability to evaluate, interpret and behave according to this information. Although the average values of health literacy achieved by the Czech population on a standardized scale are slightly above average (thirty points out of a total of fifty), the situation is not satisfactory. Overall, health literacy can be assessed as problematic or inadequate in more than 40% of respondents. According to a 2014 survey, different segments of the Czech population vary considerably in terms of health literacy. According to expectation, health literacy declines with age and increases with education levels and social status. The results show a necessity of higher education, especially in risk groups of the population.

Significant prevalence of risk behaviours and risk factors. Data from the Global Health Observatory Data Repository suggest that the Czech population occupies a prominent position in international comparisons in the proportion of adults with obesity. The relative proportion of obese persons exceeds 25% and has been increasing significantly over time. The high proportion of pre-obese to obese people in the Czech Republic and their increasing

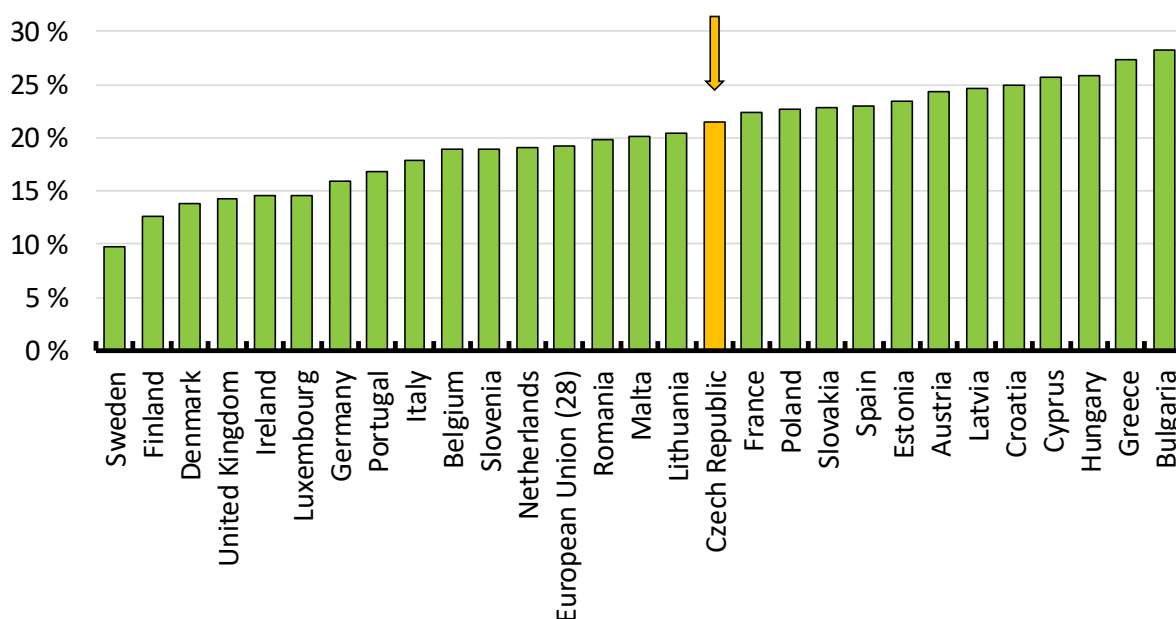
proportion over time is one of the major problems in healthcare. Internationally comparable population predictions that were carried out predict further growth in the prevalence of obesity in the Czech population, up to 35% in 2030. The incidence of a number of serious health problems and diseases, especially diabetes, can also be reliably predicted from current trends and the growth rate of obesity prevalence. The high prevalence of obesity is closely related to a high proportion of adults without sufficient physical activity. According to WHO international comparisons, this is up to 25% of the Czech population. Data showing a high prevalence of obesity in relatively young children should be considered particularly alarming (available standardized surveys point to values greater than 22-25%). This is a problem the populations and health systems of most developed Western nations are faced with. The Czech Republic is among the countries with the least fruit and vegetable consumption in the EU. Bad dietary habits are accompanied by a high daily intake of salt. In the Czech Republic, this is almost 25-22 g/day, which is up to three times the recommended daily limit (WHO/FAO recommendation). From the available international comparisons of the WHO for this parameter, the Czech population is among the circa five states with the highest measured intake. These facts have a negative impact on the health of the Czech population.

Exposure to addictive substances in the context of other adverse socio-economic factors is an important health and social determinant that can significantly influence life expectancy and contribute to social exclusion. The effects of substance use, other forms of risky behaviour and socio-economic determinants of health (poverty, unemployment, loss of social cohesion, low availability of healthcare) are syndemically combined and potentiated.

In developed countries, substance use ranks high on the list of health risk factors, e.g. tobacco use is the most important preventable risk factor in the most developed countries.

The rate of concomitant smoking (in the last thirty days) in an adult population (15+) is approximately 25-30%. The daily smoking rate (daily or almost daily) is approximately 18-25%. There has been a long-term mildly decreasing trend in smoking in the adult population, which has stagnated in recent years. More than half of 13-year-olds and three-quarters of 15-year-olds report experience with tobacco use. More than 20% of 15-year-olds are regular smokers. Experience with tobacco smoking among adolescents is declining, while the use of electronic cigarettes is growing. The high proportion of young daily smokers is a problem that will contribute to the future burden on the Czech healthcare system. Approximately one fifth of the population is secondarily exposed to tobacco smoke in the environment; this trend is decreasing slightly.

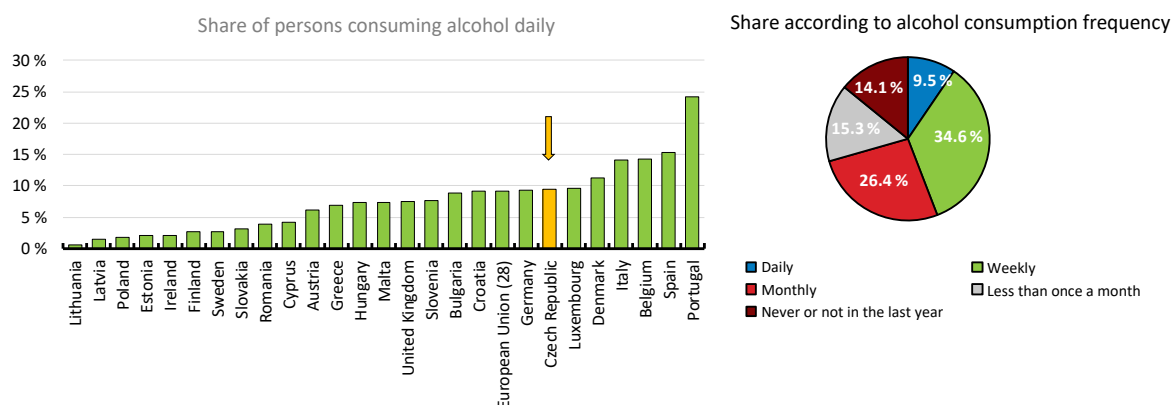
Share of current daily smokers



Graph n. 4: Proportion of daily smokers – international comparison. The Czech population shows an above-average share of daily smokers in an international comparison. The increased proportion of daily smokers is an alarming fact that requires significant interventions either in strengthening health literacy or in smoking cessation programmes (EHIS 2014).

A high proportion of hazardous alcohol consumption (14.9%) is also a serious problem for the Czech population. Alcohol use during life is reported by more than 96% of the population and 82% of the adult population reported alcohol consumption in the past year. A higher prevalence of alcohol use is observed among men (87-89%) than among women (76-78%). Approximately 70% of adults reported alcohol consumption in the last 30 days.

There has been a decline in alcohol use among children and adolescents in recent years. However, alcohol consumption is very high in the Czech Republic and alcohol use is among the most widespread risk behaviours of adolescents, who have experience with alcohol from a very young age. The proportion of children who report the consumption of one type of alcohol at least once a week increases from the age of 10–11 (10% boys, 5% girls), reaching 44% for boys at age 15 and 33% for girls. The Czech Republic thus ranks among the highest in adolescent alcohol consumption in international surveys (e.g. the ESPAD study).



Graph n. 5: Alcohol consumption – an international comparison. The Czech Republic is one of the countries

with the highest alcohol consumption rate in the EU. This fact has a negative impact on the health of the Czech population (EHIS 2014)

The risk of the consumption of cannabis is also widespread in the Czech Republic and also affects the adolescent age category. According to available international surveys on children aged fifteen, up to 30% of the population in the Czech Republic have tried cannabis, and this proportion is the same for girls and boys.

In 2017, one-third of the population aged 15–64 (31.2–38.3%) reported having tried illicit drugs during their lives. Substance use is currently declining among children and young people, and experience with illicit drugs among children and young people is relatively low. Cannabis is an exception where, despite the recent decline, the Czech Republic is among the countries with the highest rates of use among children and young people.

In 2017, there were an estimated 47.8 thousand problem users of methamphetamine and opioids (PUMO), of which 34.7 thousand were users of methamphetamines and 13.1 thousand opioid users. Of these, 3.9 thousand were heroin users, 6.9 thousand buprenorphine users and 2.3 thousand users of other opioids. The number of people abusing sedatives and hypnotics in the Czech Republic is currently estimated to be about 900 thousand, of which the largest share is people abusing alprazolam (e.g. Neurol®) – about 270 thousand persons, and zolpidem (e.g. Stilnox®) – approx. 190 thousand persons.

The proportion of illegal drug users in contact with the care system is relatively high. An estimated 45 thousand illicit drug users are in contact with addictological services per year. A more detailed description of the current situation in the field of substance use and its impacts in the Czech Republic is provided, for example, by the Evaluation of the National Drug Policy Strategy 2010–2018¹². The current situation in the area of substance use and its impacts in the Czech Republic emphasizes the need for significant intervention, inter alia, in enhancing health literacy or tobacco cessation programmes, etc. A comprehensive set of objectives and priorities in this area is elaborated in more detail in the National Strategy for Preventing and Reducing the Harm Associated with Addictive Behaviour 2019–2027 and its Action Plan.

Among the risk factors that people themselves influence by their behaviour are the negative effects of light at night on the circadian rhythm of humans as an essential tool for the synchronization of the human body, as well as the effect of the blue component of light on the human body (influence on the circadian rhythm, mental health, the secretion of some hormones, etc.).

Environmental risk factors, such as the effects of short wavelength light in the evening and at night and light pollution in general, environmental pollution, including micro-plastics, nanomaterials, etc., play an important role in human health. Climate change and the resulting risks to human health cannot be overlooked either.

The negative effects of light at night on the circadian rhythm of humans as an essential tool for the synchronization of the human body are among the risk factors that humans influence

themselves through their own behaviour, especially when it comes to the effect of the blue component of light on the human body (a negative influence on the circadian rhythm and mental health, contribution to the development of civilization diseases).

It is apparent from the above findings that primary disease prevention is an area that needs to be substantially strengthened in the Czech Republic, especially with regard to a number of health risk indicators such as obesity, an unhealthy lifestyle, tobacco use, alcohol use, etc. It is necessary to create a longer-term investment plan in this area, as the return may not be short-term.

The consolidation of **early disease detection and secondary prevention programmes** can build on the already launched activities of the National Screening Centre (IHIS), the main objective of which is to establish a methodological and personnel background for the implementation, realization and evaluation of screening programmes in the Czech Republic. These activities are managed by the *“National Council for the Implementation and Management of Early Disease Detection Programmes”*, which was established in mid-2017 and serves as an advisory body to the MoH in the area of early disease detection programmes. The main mission of the National Council is to formulate recommendations for establishing an optimal strategy for the implementation of early disease detection programmes in the Czech Republic.

Malignant tumor (hereinafter also “MT”) screening is primarily focused on breast, colorectal and cervical cancer, where organized programmes have been shown by studies to reduce mortality from these diseases in the long term, mainly due to the lower proportion of advanced, difficult-to-treat stages during diagnosis. Another important programme is neonatal laboratory screening (the diagnosis of screened diseases based on the determination of the concentration of a specific substance – or possibly a gene mutation – in a dry drop of blood on filter paper). In 2017, 114,000 live newborns were born in the Czech Republic. More than 99% of children were screened, 95 of whom were found to suffer one of the screened diseases.

The need to enhance performance and quality control in running cancer screening programmes is based mainly on the following facts:

- In the Czech Republic, all three oncological screenings supported by evidence-based medicine standards have long been established and are fully operational. However, coverage of these screening examinations has stagnated in recent years. The results point to programme reserves and it is necessary to prepare and implement a set of measures that will lead to the increased participation and interest of the target population in screening programmes, in particular colorectal cancer screening.
- The coverage of screening programmes varies across regions and also varies significantly between individual districts of the Czech Republic, where differences of up to tens of percent are monitored. In areas with less support for screening coverage, the role of primary care and target group motivation to participate in these prevention programmes should be strengthened.
- The representation of stages is developing favourably in the case of breast cancer, where most cancers are diagnosed in stage I or II. We observe a less favourable situation in the remaining two programmes, where late-stage tumors still occupy a

large part of new diagnoses. Only by continually increasing the participation of the target population in screening can a higher proportion of early stages be achieved.

- Since 2014, a direct invitation to screening programmes in the Czech Republic has been used. Insurance companies invite their policyholders at regular intervals. In total, more than 1.7 million, 1.9 million and 4.6 million invitations have been sent out for breast, cervical and colorectal cancer screening throughout the four-year assessment period. The problem of the system of direct invitations to cancer screening is the considerable resistance of a certain part of the Czech population. The system of invitations is based on the principle of inviting citizens who have not participated in the screening. The biggest positive response occurs during the first invitations (20–30% of those addressed participate in the screening). However, the response to a direct invitation declines markedly with repeated invitations. The current system therefore requires innovation to increase its efficiency.

2.2.3. Specific Objective 2.1 – Implementation of integrated care models, integration of health and social care, mental health care reform

The basic motivation for the inclusion of this specific objective among the priorities of the Health 2030 Strategic Framework was background data on the aging of the Czech population and on the increasing proportion of chronically ill patients. In the Czech Republic, there are an increasing number of citizens suffering from long-term unfavourable health conditions, which increases the demands on available health and social services provided simultaneously, in varying intensity and changing proportions. In addition to the aging of the population and the increasing absolute life expectancy, the still relatively short life in good health, i.e. until the first serious illness, is also significant in this respect. Based on recent international comparisons of the ten-year period between 2006 and 2016 (Eurostat Health Database in the version from 2019), life expectancy at birth for Czech men in 2016 was 76.1 years (2006: 73.5), but healthy life expectancy reached only 62.7 years in 2016 (2006: 57.9). In the case of Czech women, this difference is even more noticeable; in 2016, this population group had a life expectancy of 82.1 years (2006: 79.9 years), but a healthy life expectancy of only 64 years (2006: 59.9 years). Despite the positive improvement of these integral indicators of the health of the Czech population over time, these values are still lower than those typical for the populations of developed EU countries.

Especially as a result of the above, we observe a significant increase in chronic morbidity in the Czech Republic (CSO, SILC sample). The proportion of chronically ill patients in the population over 65 is almost 64%, however, the chronic morbidity calculated for the total population of the Czech Republic is also high (35%). The high chronic morbidity of people aged 65+ is a burden on the health system, which will increase as the population ages. When comparing regions, the lowest total share of chronically ill inhabitants is 25% in Prague and 29% in the South Moravian Region. On the contrary, the highest chronic morbidity is reported by the Pilsen Region (46%) and the Olomouc, Moravian-Silesian and Vysočina Regions (38-39%). The results of population surveys focused on the subjective perception of the health condition of the Czech population correspond to these data. Overall, a high percentage of the Czech population perceives their health status to be good to very good, i.e. more than 60%. However, the positive assessment of one's own health declines sharply with age and reaches only 24% in persons over 65 years of age. Among the regions of the Czech Republic, this indicator also shows considerable variation; the proportion of persons evaluating their health varies positively from 53% to 68%.

In addition to the increasing overall morbidity of the elderly population, the main factors increasing the need for effective models of integrated health, health-social and social care are the increasing prevalence of serious long-term illnesses (cancer, *diabetes mellitus*, neurodegenerative disorders in old age) and problems with funding and human resources to ensure the availability of care for the affected population. The following data is a brief summary of the epidemiological characteristics of selected diseases, which should be the primary goal of activities that change models of care organization and integrate health and social services:

- **Total morbidity.** In 2017, approximately 60% of the Czech population lived without major illnesses (e.g. cardiovascular diseases, diabetes, cancer). However, morbidity increases significantly with age, and over the age of 65 the measurable value of Deyo's adaptation of the Charlson Comorbidity Index (DCCI) reaches two or more points (i.e. two diseases or one more complicated disease) in half the population; over the age of 85, the threshold is over 75% of the population. The health of half of the Czech population over 85 is in a worsened or severe condition. Men have a slightly higher morbidity rate in the age group 0-20, from 20 to 55 there is a slightly higher morbidity rate in women. From the age of 55 to the end of life, there is a higher morbidity rate in men compared to women of the same age.
- **Cancer epidemiology** is a major challenge for the rationalization of the organization of care in the Czech healthcare system. In 2016, there were 87,290 patients with malignant neoplasms newly diagnosed in the CZ, which is 826.2 per 100,000 people. In 2016, 27,261 persons died in connection with malignant neoplasms, which is 258.0 per 100,000 persons. In total, as of 31 December 2016, there were 562,329 persons with malignant neoplasms or with a history of this disease living in the Czech Republic, i.e. 5322 per 100,000 persons. The malignant tumor burden of the Czech population is also very high from an international point of view and is steadily increasing over time (an annual increase in prevalence of +3 to 4%). Even relatively conservative predictive models show that by 2030 the annual number of newly diagnosed cancers could increase up to 110,000, and a total of up to 790,000 persons can be expected.
- **Diabetes.** The Czech Republic is among the top third of international rankings for the incidence of diabetes in the population aged 20-79. The total number of diabetics in the Czech Republic increases by about twenty thousand each year; in 2018, the incidence rate exceeded one million. DM occurs in 30% of the population over the age of seventy. Thus, as the population ages, a continuing increase in the number of patients can be expected. Diabetes is predicted to occur in more than 1.3 million people by 2030.
- **Chronic respiratory illnesses.** In 2017, chronic respiratory illnesses of the lower respiratory tract were recorded in 330,000 inhabitants of the Czech Republic (3.1% of the population). The number of patients in individual regions ranges from 25 to 37 cases per one thousand inhabitants. Half a million inhabitants of the Czech Republic suffer from asthma (4.9% of the population in 2017). The number of patients in individual regions varies from 40 to 57 cases per one thousand inhabitants. The number of asthmatics increases significantly by up to 2.5% year-on-year.

- **Hypertension.** The number of patients treated with hypertension is increasing over time, as is the burden on the health system. In 2017, almost two million patients had the diagnosis of I10 written on their documents and at the same time were treated with selected drugs. The increase compared to 2016 is 11,499 persons, compared to 2010 there is an increase by 299,148 patients.
- **Long-term hospitalization of the elderly.** In recent years, the number of hospitalizations longer than 30 days in patients over 65 years has risen by an average of 1.3% per year. This trend signals a very likely future development related to the aging of the Czech population.
- **Hospitalization at the end of life of chronically ill patients.** Available data from the National Hospital Registry show that more than half of patients are repeatedly hospitalized in the last six months of life and almost 15% undergo more than three hospital stays. Obviously, there is room for improvement in the organization of care, as many of these hospitalizations can be prevented by the effective management of care for the dying. Very numerous hospitalizations in more than 15% of patients in the last six months of life are reported by six regions in the Czech Republic.

It is an objective fact that the Czech healthcare system is entering the processes of organizational change and integration of various forms of care unprepared. Almost all major segments of care are characterized by a more or less separate system of health and social services, the interconnection of which is cumbersome, often with legislative obstacles. The performed analyses of the capacities of different categories of providers show an insufficient saturation of health and social needs of patients with different levels of necessary support. High heterogeneity in the structure of health and social services between regions of the Czech Republic is documented. The following summary of available data sources describes selected issues that will need to be addressed as a matter of priority:

- **Social service providers.** Available surveys on the number of providers of social services (MLSA) show that the distribution of capacity varies considerably between individual regions of the Czech Republic and many forms of service are not represented in some regions at all. The most common and also relatively evenly represented types of social services include social counseling centres, homes for the elderly, homes for the disabled, homes with a special regime, and partly also centres for social rehabilitation services. There are some completely uncovered regions in the case of generally numerous shelters and sheltered housing. The following types of services are significantly less numerous and are not available in many regions of the Czech Republic: day care centres, week-long care centres, low-threshold day centres, intervention centres, aftercare facilities and more. Providers of social services show a lack of capacity expressed as the number or share of dissatisfied clients in a given calendar year. The available data show that the total share of dissatisfied applicants (clients) for all regions of the Czech Republic is 20%, while in the Central Bohemian Region it is 32%; the highest share is in the Zlín Region, namely 39%. The absolute numbers of dissatisfied clients are dominated by the most populous regions, i.e. Prague, the South Moravian Region and the Moravian-Silesian Region.
- **Home care.** Almost 150,000 people (1.36% of the population in 2017) are treated in home care annually, with significant differences in the number of people treated in home care between regions. Nevertheless, an increase in the number of people in

home care in 2010–2017 is evident in all regions, but with varying intensity. In the Central Bohemian Region, the number of people in home care increases annually by 6%, while in the South Bohemian and Karlovy Vary Regions, the increase is only 1% per year.

- **Long-term care.** The demand for long-term care has increased in the Czech Republic in recent years, as has been the case in other OECD countries. The impact of an aging population is already increasing pressure on the capacity in the long-term care segment. The share of the population aged 80 and over is expected to rise from 4% in 2015 to 9% by 2050. The current organization and funding of long-term care is not sufficient to absorb such an increase in demand. Long-term care expenditures represented 1.3% of the GDP in 2015, of which 82% was inpatient long-term care. The development of care facilities should be encouraged and the policy on the reimbursement of healthcare provided in hospitals and other institutions should be harmonized. The development of comprehensive home care should be favoured as an alternative to long hospitalization.

Integrating timely palliative care and end-of-life care into the care system must be an important strategic objective. Qualified estimates from developed countries in the western world declare the need for some form of palliative care in 60-80% of all deaths. Due to the structure of mortality, the Czech population will generate approximately the same amount of care at the end of life. Recent death certificate data show that nearly 78% of all deaths fall into diagnostic groups that are relevant to palliative care. So-called expectable deaths are the challenge for integrated care organization models, as a suitable combination and availability of services from different segments can result in not only higher quality but also cost savings. The combination of home-based services, mobile services and dedicated team services can reduce the number of acute hospitalizations at the end of patients' lives.

A total of 59.2% of all deaths in the Czech Republic can be retroactively identified as deaths due to a chronic cause. These deaths can be assumed to have a high level of expectability and a high probability of need for some form of palliative care. This share represents about sixty thousand deaths per year.

Although a number of positive steps were taken in the Czech Republic in 2014–2018 in support of palliative care and end-of-life care, and pilot projects focused on mobile palliative care were carried out, a comprehensive model of multi-level and sufficiently heterogeneous palliative care is still missing in many regions. In particular, the capacity for home hospice care is not sufficient. This leads to the overuse of hospital care, typically associated with the use of emergency medical services, in a number of regions. This area must become one of the priorities for the reorganization of health services in the coming period, as it represents great potential for saving available Czech healthcare capacities.

An equally important area is integrated oncological care. The system will be set up in such a way that highly specialized diagnostics and therapy will take place in specialized centres, and in cases of a subsequent stabilized condition, care will be transferred to the level of general practitioners. The goal is to create a system that evenly uses capacity, as oncological care is currently implemented mainly in Comprehensive Oncological Centres. The two workplaces most burdened by the number of patients, but especially by the spectrum of the most serious oncological findings, diagnoses and indications are the National Oncology Centres, Motol Teaching Hospital and the Masaryk Institute of Oncology in Brno, which predominantly deal with very expensive rare diseases that require special diagnostic and therapeutic approaches. This does not merely involve pharmacotherapeutic

treatment, but also special radiation oncology therapy, endoscopic methods, invasive procedures during imaging methods, etc.

An important part of Specific Objective 2.1 is the reform of care for people with mental illness, which means, in particular, strengthening the processes of destigmatizing these health problems, enhancing the availability of multidisciplinary care in the community, and strengthening the equality of access to health and social services in the vulnerable and numerically-significant population of people with mental illness.

The Czech Republic has made significant improvements in terms of the coverage and treatment of mental health care. There has been a shift from inpatient to outpatient care. The number of outpatients with mental illness has doubled since 2000 to almost 700,000, while the use of hospitalizations has decreased. A reform is currently being implemented with European funding, aimed in particular at improving the quality of life of people with mental illness through the restructuring of services and a new approach to patient support. The new approach aims to ensure the early diagnosis and treatment of underlying mental disorders through better cooperation between primary care and specialized psychiatric services. The network of existing outpatient psychiatric and psychological services will be expanded, and a network of multidisciplinary field teams and other community care services will be created.

Psychiatric care and the number of patients with mental illness represent a large segment of the Czech healthcare system. In recent years, the number of patients in outpatient and inpatient psychiatric care facilities has been growing:

- Mental disorders of children and adolescents and neurodegenerative disorders in old age are especially on the rise. A large increase in patients is also seen in neurotic, stress and somatoform disorders in adults. This group also accounts for the largest proportion of all patients (almost 40%). The most common are other anxiety disorders (F41, especially mixed anxiety-depressive disorder, panic disorder and generalized anxiety disorder), reactions to severe stress and adjustment disorders (F43).
- The hospitalization burden of F00-F99 diagnoses in the Czech Republic is very high, although the total number of hospitalizations of persons with mental illness has recently decreased. More than 78,000 hospitalizations where a psychiatric diagnosis is listed as the main cause take place annually in the CZ. These hospitalizations are often repeated several times a year for a given patient; the total index of the annual number of hospitalizations per patient is 1.33.
- Psychiatric diagnoses account for approximately 3.4% of all hospital stays, but in the age group 11–20 it is 7.2%, and in the age group 21–50 this accounts for 5–6% of all hospital stays.
- This continuously huge burden encumbers hospitals and, in particular, the acute inpatient care segment. For this reason, the development of the psychiatric care reform is classified as one of the principal sub-objectives of the Health 2030 Strategic Framework. The target status is a substantial reduction in the consumption of non-acute hospital services by persons with mental illness and providing effective assistance for them in inpatient aftercare, as well as ensuring effective assistance to people with mental illness in community services.

Recent epidemiological trends indicate a significant increase in the needs of health and social services in the care for chronically ill patients, in particular long-term elderly patients. An increasing number of patients requiring long-term care is predicted in the future, creating pressure to introduce new models of organizing care, effectively integrating primary, outpatient and hospital care, and adjusting the balance between acute and inpatient aftercare. The high and increasing number of people with mental illness and the associated treatment burden are the reasons for the very important psychiatric care reform and the establishment of a base for multi-disciplinary community care in psychiatry.

2.2.4. Specific Objective 2.2 – Personnel stabilization of the Ministry of Health. Specific Objective 2.3 – Digitalization of healthcare Specific Objective 2.4 – Optimization of the reimbursement system in healthcare

Specific Objectives 2.2-2.4 of the Strategic Framework Health 2030 focus on stabilizing the network of healthcare providers, especially on ensuring their staffing and financial capacities. These activities potentiate each other strongly, because, for example, the personnel stabilization of the department cannot be separated from adequate levels of salaries and wages, which are further closely related to the reimbursement of health services. Personnel costs represent a large share of the total budget of providers, in the segment of inpatient care it is more than 55-60% of total costs. Although the revenue side of public health insurance has been growing annually in absolute terms in the period of 2018-2020, the resources of the system are not unlimited. This is even more true of human resources. The aging of the Czech population also affects healthcare workers, and weaker generations will limit the human resources of health and social services in the future. For these reasons, it is strategic to look for new ways to optimize reimbursement mechanisms (Specific Objective 2.4) and also seek to reduce administrative burdens and facilitate the work of doctors and health professionals, for example, by effectively computerizing processes and managing health services (Specific Objective 2.3). These three specific objectives of the Strategic Framework can therefore be described as managerial, and their justification is joined together in this comprehensive chapter.

In particular, building an eHealth system represents an important potential for improving healthcare governance through better information collection and use for more efficient service management. A comprehensive concept of e-health is being prepared in the Act on the Electronization of Healthcare, which is a positive result of development in 2017–2019. During the third quarter of 2019, intensive work continued on the finalization of the individual parts of the wording of the Act on the Electronization of Healthcare. The Chamber of Deputies of the Czech Republic is expected to discuss the act in 2020.

At the beginning of 2018, a mandatory electronic prescription was also introduced (with a one-year suspension of sanctions for non-compliance). After six months, electronic prescriptions were used at a rate of about 80% of the maximum capacity. However, the key components of eHealth have not yet been implemented in such a way that would enable their utilization in healthcare management. New technologies to streamline communication between physicians and health insurers are not sufficiently utilized to the extent that would correspond to the computer facilities of offices, including in the outpatient sector. The conducted investigations show that doctors' offices in non-bed care are mostly equipped with both computers and an internet connection. Based on records of properly submitted

reports, only about 5% of offices report a problem in this area. If an office works with PCs, almost 98% of the time it also has internet connectivity. There were no major regional differences in these surveys. The current system setup should facilitate computerization, as the system is already heavily centralized and rewarding health service providers already depends on the transmission of information electronically.

As in many other countries, the sharing of personal health data through electronic health records faces some resistance with regard to the protection of personal data. The development of modern eHealth systems has already systematically focused on security issues. A number of activities under Specific Objective 2.3 of the Health 2030 Strategic Framework will also address this issue. Awareness of the importance of data sharing and security solutions is needed. A targeted policy should ensure the appropriate equipment of health service providers, including possible subsidies, incentives to deploy and use the systems, user training, and the introduction of court rules to give people confidence regarding the use of information.

The COVID-19 pandemic has shown the unpreparedness of health systems at both the international and national levels. For this reason, the Ministry of Health proceeded to reprofile the staffing of the Czech healthcare system, including the strengthening of public health protection authorities.

Personnel capacities of physicians and non-medical healthcare workers are a condition for the availability and quality of health and social services. The main activities of Specific Objective 2.2 of the Health 2030 Strategic Framework result from the findings of the newly acquired general data of the National Register of Healthcare Workers (NRHW) and the National Register of Health Service Providers (NRHSP). In many segments, the current staffing of healthcare services is not optimal, and in the case of GPs for adults and children and adolescents, the situation in some regions is almost critical (offices closing without compensation due to progressive demographic aging). The second weakest point is the long-term insufficient and declining capacity of general nurses and midwives in acute inpatient care. The data of functional registers and annual departmental statistical surveys can be summarized as follows:

- In total, the system quantifies the total capacity of physicians as approximately 42,000, followed by dentists (7540) and pharmacists (6460). Nurses and midwives report a total of 82,300 active full-time jobs in the system. In 2017, the total number of jobs of all active healthcare workers was 214,797.
- In the Czech Republic there are a total of approximately 4.0 physicians' jobs per one thousand inhabitants, which is slightly above average in the international comparison of OECD countries, but lower compared to similar healthcare systems such as Germany or Austria (4.1 - 4.3 jobs per one thousand inhabitants).
- A major problem in the Czech Republic is the uneven distribution of physician capacities in the system. The influence of large towns and university hospitals is clearly evident, especially in Brno and Prague, where the available capacities exceed 6.5 doctors per one thousand inhabitants. On the other hand, in the Central Bohemia, Ústí nad Labem, Liberec and Zlín Regions, the values are lower than 3.3 jobs per one thousand inhabitants and this can also be interpreted as below average from a European point of view.

- Gender imbalances are also a problem in the demographic structure of the population of Czech physicians. Especially in the last decade, a significantly higher proportion of women than men graduate from medical faculties (on average 64% to 36%). The feminization of the physician profession must be reflected in models predicting the availability of capacities in the coming years, as the expected departure of physicians on maternity leave will have a significant impact on ensuring the full range of care.
- In terms of the number of physicians in hospitals per capita, the Czech Republic does not deviate from the average of European countries, with 225 hospital physicians per 100 thousand inhabitants, the same number as, for example, Germany. The structure of physicians in hospital care categories L1-L3 did not change significantly in 2010–2017. In quantitative terms, the number of physicians is increasing slightly, and the number of inhabitants per physician is therefore decreasing. Approximately +250 to +350 full-time physicians are added to the system of health service providers in the Czech Republic each year. This value is relatively low, considering that medical faculties produce more than one thousand expected new jobs a year. There are several reasons for this difference:
 - a certain capacity of new graduates of medical faculties is absorbed outside of healthcare (medical assessment, hygiene, research, further study),
 - some of the medical graduates do not enter healthcare or go abroad,
 - every year, approximately 400-500 physicians leave the system due to old/retirement age.
- The number of physicians in outpatient care recorded a slight increase in the period 2010-2017, and the share of the L3 category is increasing (as of 31 December 2017 there were 19 660 L3 workers, which is 93% of all physicians in outpatient care). The problem of outpatient care in the Czech Republic is not the absolute number, but the structure of expertise and geographically asymmetric distribution of physicians operating in it. In particular, detailed analyses identify a significant disparity between outpatient specialists and GPs, as well as an uneven regional distribution of available capacities, and a problem with the demographic aging of GPs, which is not counterbalanced by corresponding new capacity inputs.
- The number of dental practitioners in outpatient care increased slightly in the 2010–2017 period, and the LZ1 category increased (as of 31 December 2017 there were 6345 LZ1 workers, which is 81% of all dental practitioners in outpatient care). This trend is positive and highly desirable, as it leads to the rejuvenation of this group of specialists.
- In the Czech Republic, there are a total of approximately 7.8 nurses per one thousand inhabitants, which is slightly below average compared to the OECD countries. In terms of neighboring countries in developed Europe, this number is comparable to Austria, but significantly lower than in Germany. Unlike in the case of physicians, the total number of general nurses in hospitals in the Czech Republic (8 per 1000 inhabitants) is below the OECD average (9 per 1000 inhabitants). The ratio of general nurses to physicians is also lower than the OECD average. The Czech Republic has one

of the lowest numbers of nursing graduates within the OECD – 16 per 100,000 inhabitants – and a downward trend has been observed in recent years.

However, the fundamental problem in the availability of capacities is not the absolute number of nursing careers available, but their unequal distribution in regions and different care segments, and the continuously decreasing capacity of nursing careers in acute inpatient care.

The impact of large cities on the regional distribution of nurse and midwife jobs is still clearly noticeable, but not of the acute bed care providers in these cities. On the other hand, less than 6.5 nurses per one thousand inhabitants work in the Central Bohemia and Liberec Regions, and these values can also be interpreted as strongly below average from an international point of view. Regional overviews also show a significant disparity between the capacity of nurses available for acute inpatient care and long-term and aftercare. The lower number of part-time nurses in non-acute inpatient care reflects an unbalanced low number of beds in this care segment. This situation inevitably leads to an increased burden on acute inpatient care, including its utilization in addressing the health problems of the dying.

The main problem of the capacity of nurses in the Czech healthcare system is the availability of capacities in hospital care, especially in shift operations of acute inpatient care. An international survey on the number of nurses in hospital care (EUROSTAT 2015) revealed that the total number of nurses in this segment of care in the Czech Republic is significantly lower than in a number of countries with comparable healthcare (e.g. Germany or Austria). In addition, nurses' capacities, especially in acute inpatient care, have been steadily declining. Since 2010, more than 2000 nurses have left the acute inpatient care segment in the Czech Republic. This fact is already limiting the achievable utilization of acute beds and leads to the temporary closure of entire wards. Another problem is the availability of nurses in the segment of residential social services in which healthcare is provided.

The work of nurses in shift operations is demanding and is cited as one of the reasons nurses leave this segment of care. According to the National Register of Healthcare Workers, approximately 39 800 nurses in the Czech Republic work shifts as natural persons; these persons cover approx. 35,000 full-time jobs (according to the results of departmental statistical surveys). Applied to the total number of general nurses, pediatric nurses and midwives in the Czech Republic, 48% of the total number of natural persons and 42% of the total number of nursing jobs in the Czech Republic work shifts in some type of inpatient care. In acute inpatient care, 64% of general nurses work shifts, which is approximately 35,600 natural persons covering approximately 30,800 full-time jobs, and in other inpatient care, 71% of general nurses work shifts, covering approx. 4180 full-time jobs.

A very important tool for stabilizing the personnel capacities of the health services system is, of course, remuneration and the progressive growth of salaries and wages with correctly set motivational components. For these reasons, the main activities of Specific Objective 2.4 are focused on the optimization and rationalization of the reimbursement system of all segments of care, including the proposal for a form of reimbursement of newly emerging and much-needed segments of integrated care. A very important sub-objective here is the optimization and further development of the newly created system of reimbursements for acute inpatient care (CZ-DRG system). The aging population of the Czech Republic and associated expected increase in morbidity and the number of elderly people requiring long-term care now calls for the construction of a system similar to the DRG for the aftercare and

long-term care segment. The implementation of an exactly-managed reimbursement system for this care, including various models of community and palliative care, will help the necessary capacity building and increase accessibility for all Czech citizens in need; it will help standardize healthcare and facilitate the use of modern methods in diagnosis and treatment. In response to the primary care reform (Specific Objective 1.1) it will be necessary to optimize the system of reimbursements in primary care with an emphasis on motivational, performance-supporting components, and create models defining the balance of reimbursements in different segments of outpatient care.

The outputs of the Specific Objective 2.4 activities will thus contribute to the rationalization of the reimbursement system, which has significant room for improvement in the Czech healthcare system, even in the absolute volume of funds in relation to gross domestic product. Healthcare expenditures in the amount of 7.3% of the GDP in 2016 was significantly below the overall average of over 9% compared to other OECD countries. Austrian and German healthcare services are financed by more than 10% of the GDP of these countries. In addition to the low overall volume of funding, the Czech Republic also has a low resource heterogeneity, and international analyses also criticize the lack of citizens' possibility to choose different forms of insurance or supplementary insurance. Multi-source funding would bring additional resources into healthcare and increase system stability, resp. its resilience to fluctuations in the performance of the national economy. Other factors worth considering in this area can be summarized as follows:

- In general, the increased use of outpatient care is more cost-effective than inpatient care. It reduces waiting times and is the most appropriate treatment method for many interventions (outpatient surgery). According to available international comparisons (2015-2016), the inpatient care sector (predominantly hospitals) in the Czech Republic accounted for 26% of total expenditures, compared to 29% in the EU and 28% in the OECD in 2015. Unlike other Central and Eastern European economies that, like the Czech Republic, have inherited large hospital sectors, the largest is the outpatient care sector, with 32% of healthcare expenditure, while long-term and inpatient care expenditure is less significant and roughly corresponds to the OECD average.¹³
- While in many OECD countries there is a shift from inpatient care to one-day care, which is motivated by efforts to improve efficiency, in the Czech Republic expenditures on day care in hospitals remain low (estimated to be only 2-3% of hospital expenditures). More effort is needed to shift selected hospitalizations from longer bed care to one-day care. This trend challenges both the search for appropriate reimbursement mechanisms and the definition of clinical one-day care guidelines.
- Although the share of GDP aimed at investments in the Czech healthcare system corresponds to the overall average of OECD countries, it is still significantly lower, e.g. in comparison with Austria or Germany. A certain problem of the Czech

healthcare system is the fact that investments and renewal of infrastructure, especially hospitals, is not adequately reflected in the reimbursement mechanism of inpatient care. Hospitals and healthcare facilities therefore rely on EU public subsidies and funding when investing. Investments in health infrastructure and its modernization should be better planned and coordinated across regions and should be guided by an integrated approach to healthcare funding at the level of hospitals, regions and ministries. For example, the treatment of acute ischemic stroke has been regrouped into stroke centres and has led to significant improvements. As a result, the likelihood that a patient will receive the necessary treatment within the recommended sixty-minute limit is among the highest in the EU.

Increasing healthcare expenditures together with increasing their effectiveness can be highly beneficial. Estimates based on a sample of OECD countries in 1990-2015 suggest that a 10% increase in healthcare expenditures (or approximately \$245 per capita per year) is associated with a potential increase in average life expectancy by approximately 3.5 months. However, care should also be taken to improve the efficiency of the healthcare services system. A comparison of the Czech Republic and countries with similar expenditures and institutional features suggests that health outcomes are still partially inadequate. Comparative analyses of the OECD show that the Czech health condition remains below Slovenia, Korea and Greece, even taking into account other differences in lifestyle and social factors. This suggests that, at the current level of funding, room for increasing efficiency and improving health outcomes does exist in the Czech healthcare system¹⁴.

The remuneration of medical staff is a major challenge for reimbursement mechanisms in all segments of care. Over the last 2-3 years, there has been a significant increase in workers' remuneration, particularly in inpatient care, and an overall, centrally managed increase in a similar volume is not possible at the same rate in the long-term. On the one hand, the selective incentive potential is lost in an overall increase in remuneration and, on the other hand, such a system does not reflect the specific personnel needs of regions or individual providers. The overall development of remuneration according to 2018 data can be summarized as follows:

- The salaries and wages of physicians have increased significantly since 2017, reaching an average (total average of salaries and wages, all inpatient care segments) of around CZK 77,600 in 2018. The acute care segment significantly differs from the segment of other inpatient care (total average in acute care: CZK 78,000 vs. in other inpatient care: CZK 71,900). The observed growth since 2017 continues in a similar trend to the previous period and the overall average remains unchanged. This is a year-on-year growth of +8 to +10% in 2017 -> 2018 (wages grew by 7.4% on average, salaries by 8.3%). Although physicians' salaries and wages are growing at relatively the same rate, there remains a significant difference between the two forms of remuneration. The average salary of physicians reached CZK 80,412 in 2018, while the average wage was CZK 73,523.

- Thus, the average remuneration of physicians significantly exceeded average remuneration in the Czech Republic in 2018 (according to CSO data: CZK 31,900). Compared to 2010, the remuneration of physicians in 2018 is increasing with a cumulative growth index of +157%, while the average wage in the Czech Republic grew by +134% compared to 2010. Although salaries and wages are growing at relatively the same rate, there remains a significant difference between the two forms of remuneration. In 2018, the average salary of physicians reached CZK 80,412, while the average wage was CZK 73,523. In hospitals set up by the Ministry of Health of the Czech Republic, the average salary of a physician in 2018 amounted to CZK 85,690, which represents a year-on-year increase of 8 to 9%.
- Salaries and wages of general nurses have increased significantly since 2017, reaching an average of CZK 35,800 (total average of salaries and wages, all segments of inpatient care) in 2018. The acute care segment does not differ significantly in the total average of nurses' remuneration from the segment of other inpatient care. The observed growth since 2017 continues in a similar trend to the previous period. This represents an increase of 12 to 13% year-on-year in 2017 -> 2018, and this relative increase was found in approximately the same amount for all types of bed care providers.
- The average remuneration of general nurses in 2018 thus significantly exceeded the average remuneration in the Czech Republic (according to CSO data: CZK 31,900). Compared to 2010, the remuneration of nurses in 2018 increased with a cumulative growth index of +149%, while the average wage in the Czech Republic grew by +134% compared to 2010. Although salaries and wages are growing at the same rate, there remains a significant difference between the two forms of remuneration. In 2018, the average salary of a nurse was CZK 41,188, while the average wage was CZK 34,828.

Since 2018, the Ministry has been mapping a decrease in the employment capacity of general nurses and midwives in the acute inpatient care segment by over 2000 jobs. For this reason, the main activities of Specific Objectives 2.2-2.4 of the Health 2030 Strategic Framework focus on a wide range of measures to facilitate the work of health professionals, increase its social value, and hence the interest of young people in it. The following measures may potentially be very effective in this respect:

- Organizational measures, in particular more effective and reimbursed changes in the organization of care (Specific Objective 2.2, 2.4) and the related strengthening of the position of general and pediatric nurses in the healthcare system.
- A general improvement of the organization and continuity of (not only) postgraduate training for health professionals, increasing the attractiveness of education and work in healthcare (Specific Objective 2.2).
- Reducing administrative burdens, improving and facilitating communication in the performance of work through the digitalization of agendas and computerization of work organization (Specific Objective 2.3).
- Supporting the reconciliation of family and work life (Specific Objective 2.2).

2.2.5. Specific Objective 3.1 Involvement of science and research in the solution of the priority tasks in healthcare

Healthcare is an area that is constantly evolving towards higher productivity and better results through the application of scientific knowledge and technological innovation. For this reason, the specific objective of developing the innovative potential of healthcare services is of strategic importance. The involvement of science and research should also be seen as important support for the activities of a number of other specific objectives of the Health 2030 Strategic Framework justified above. The key activities that synergistically support the sub-activities of other specific objectives include:

- support of research with an emphasis on prevention, the validation of new effective practices in primary prevention, the implementation and testing of new secondary prevention programmes and targeted early detection programmes for serious diseases,
- support for research into health-related behaviour, including regular monitoring of the population's level of health literacy,
- support for research activities in relation to population aging,
- creation of a valid study on the state of health of the Czech population, which will be the starting point for individual research support programmes,
- creation of a scientific research and innovation base for healthcare digitalization, the development of the knowledge base of digital healthcare.

But science and research, of course, serve not only to support other strategic goals, they bring a whole new quality of health services into many areas of medicine, with the potential to save both financial and human resources. The following two areas can be mentioned here as examples:

- Supporting research focused on ICT applications, the Internet of Things and artificial intelligence in medicine, and methods based on these technologies and research in the field of telemedicine.
- Care for those with long-term illnesses, which requires almost full-day monitoring, will be very difficult to ensure in the near future without further technological innovations. Technological developments facilitating remote monitoring and the early detection of imminent health problems can fundamentally increase the safety of care for these patients, address the lack of specialist staff and move the focus of care to the patient's home environment. This is an area of increasing importance, as an example it is possible to name Alzheimer's disease and generally dementia in old age. The number of persons in the Czech population with a reported diagnosis of dementia increased by up to 5% year-on-year in the reporting period 2015–2017.

In 2017, 102,000 persons with dementia were identified in NHIS data, of which 60% were patients with fully diagnosed Alzheimer's disease and 40% were patients with untreated dementia. For various types of untreated dementia, there is the presumption that the type of neurodegenerative disorder is not fully known and the presence of Alzheimer's disease and development of Alzheimer's dementia in the future is therefore not excluded. Given the known worldwide under-diagnosis of patients with neurodegenerative diseases (up to a

third of individuals with Alzheimer's disease are not diagnosed), it can be assumed that only the tip of the iceberg is detected from the available data.

- Applied research aimed at tracking costly diagnostic and therapeutic innovations and improving systems for assessing the impact of these technologies based on HTA (Health Technology Assessment) methodologies.
- The rapidly increasing volume of treatment with innovative medicines or technologies in the Czech Republic can be documented in so-called centre treatment (i.e. on the consumption of innovative medicines indicated in accredited centres of highly specialized care according to MoH CZ methodology). The prevalence of patients treated with centre drugs increased significantly between 2015 and 2018 (+10% to +14% annually). In 2016, 52,640 patients were treated this way. In 2016 and 2017 there was a year-on-year increase of +10% and in 2017, 57,905 patients were treated with centre treatment. The estimated number of patients treated in 2018 is 62,162, with a further increase of about 7% compared to 2017.

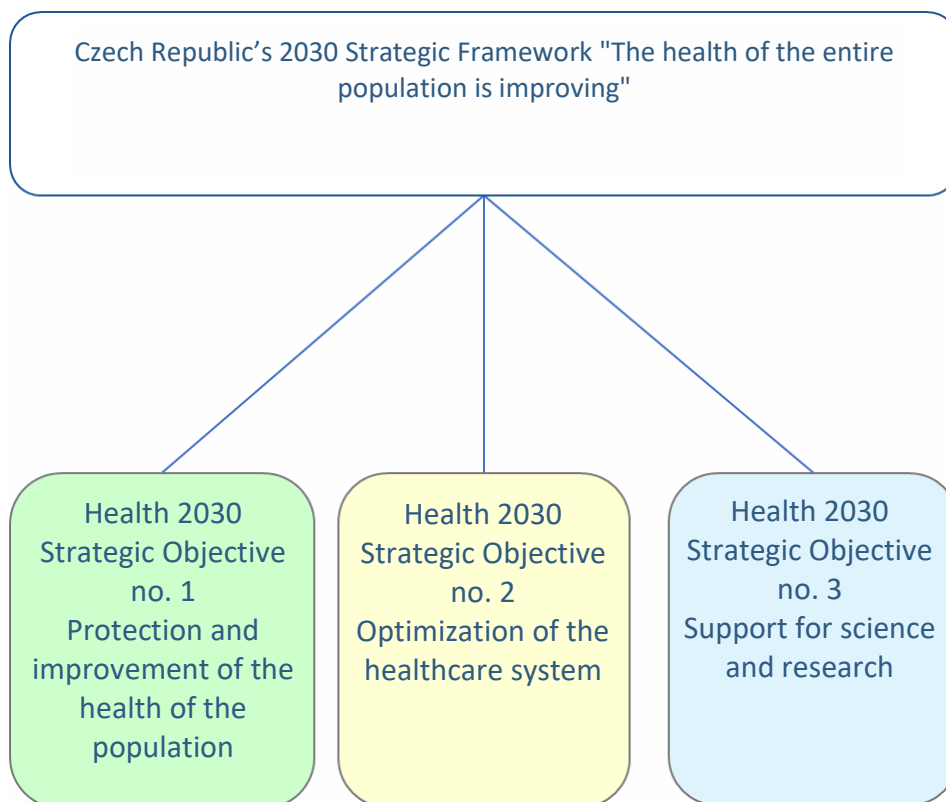
The emergence of new technologies in clinical practice increases the pressure on financial resources. For these reasons, it is very important to support applied interdisciplinary research aimed at assessing the cost-effectiveness of innovations and modeling their sustainable implementation in real life. The continuing molecularization of many clinical disciplines is changing the concept of clinical research itself, introducing new assessment methods reflecting a personalized approach to patients (e.g. "N of 1 trials"), reinforcing the importance of clinical data evaluation (RWE: Real World Evidence).

3. Proposal section – specific objectives

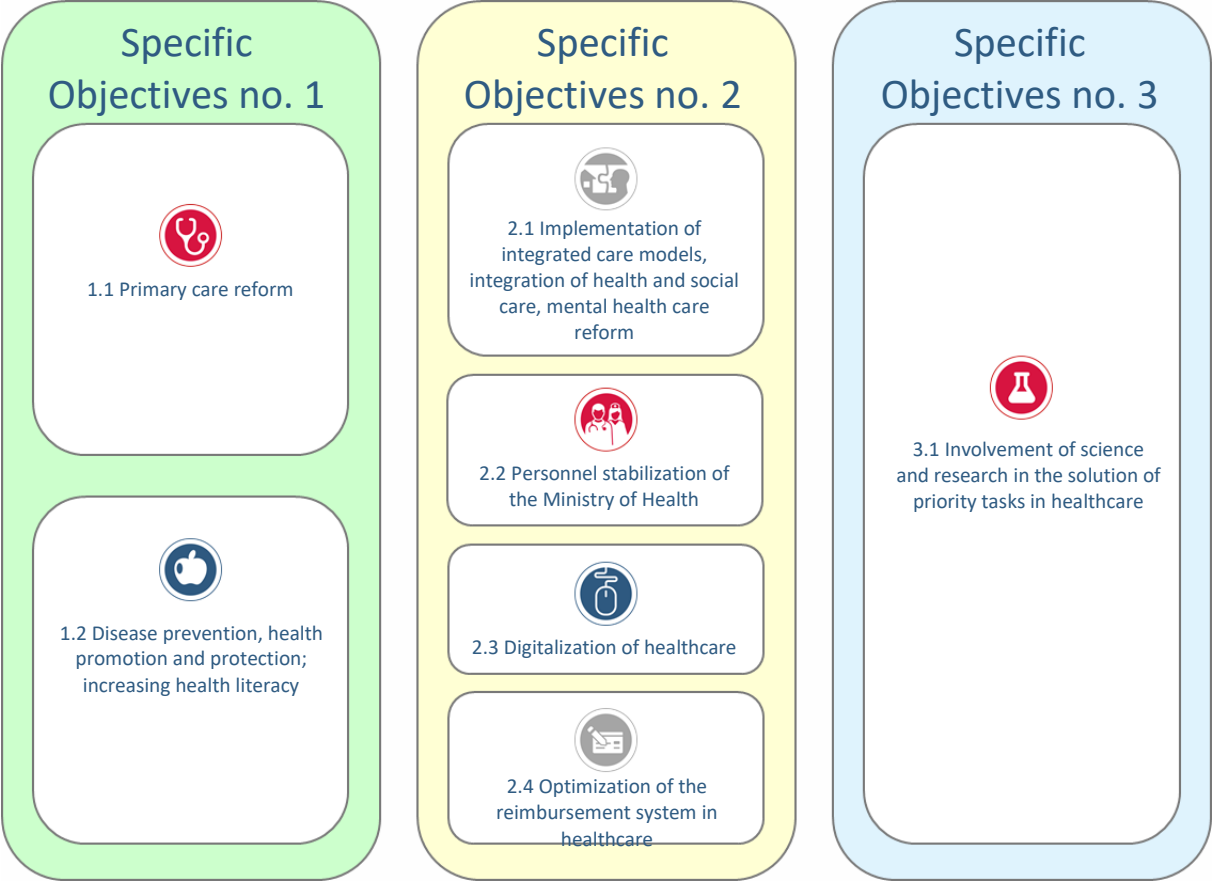
The main ambition of the Health 2030 Strategic Framework is not only to be an overarching strategic document for the healthcare sector, but also a guide for all state and local authorities, as factors affecting the health of the population overlap across all ministries and are also subject to regional and municipal decision-making. It is still true that people's health is not created in hospitals, but wherever people live, work and rest.

As already pointed out in the introduction, the Health 2030 Strategic Framework builds on the Czech Republic's 2030 Strategic Framework "The health of the entire population is improving", the specific objectives¹⁵ of which are thematically focused on the following strategic objectives of the Health 2030 Strategic Framework.

1. Protection and improvement of the health of the population (fulfillment of Specific Objectives 1, 2, 4 and 5 of the CZ 2030 Strategic Framework)
2. Optimization of the healthcare system (fulfillment of Specific Objectives 2, 3, 4 and 5 of the Czech Republic 2030 Strategic Framework)
3. Support for science and research (fulfillment of Specific Objectives 1 and 3 of the Czech Republic 2030 Strategic Framework)



With regard to the current and long-term needs of the health sector, but also with regard to the existing knowledge and experience presented in the Analytical Section of the Health 2030 Strategic Framework, each of the strategic objectives has been elaborated into a more detailed division into specific objectives. The selection of specific objectives was influenced mainly by the assessment of their possible impacts on the fulfillment of the relevant strategic objective.



The specific objectives are then broken down into sub-objectives, which formulate concrete steps and activities leading to the implementation of the given sub-objective and thus the specific (and strategic) objective. At the same time, however, they all view healthcare as a complex area that represents health as an essential condition of prosperity of the individual and the entire society. The health status of the population has a considerable impact not only on the healthcare system and costs, but also on employment, the welfare system of the state and thus the economy of the whole country.

Fulfillment of these specific objectives will be carried out through the implementation of the related Implementation Plans, which are the main implementation documents of the Health 2030 Strategic Framework and elaborate on the subject in more detail. These Implementation Plans may be complemented by more specific (either narrower thematic or temporal) action plans. Due to the specificity of the field of health research, Specific Objective 3.1, Involvement of science and research in the solution of priority tasks in healthcare, will be implemented primarily through the National Concept of Health Research.

Below is the chart for the specific objectives which contains a general description of the Implementation Plans of the specific objectives of the Health 2030 Strategic Framework.

3.1. Primary care reform

Primary care, provided by general practitioners (GPs + GPCAs + outpatient service providers) in cooperation with gynecologists and dentists, is the basis of functioning healthcare in developed countries. It has a major impact on the health of the entire population and the long-term economic sustainability of the entire health system. A well-trained, motivated general practitioner equipped with the maximum possible competencies is the cornerstone of the health system. He/she is able to provide high-quality and affordable (in geographical, temporal, economic and social terms) care very effectively. According to the OECD, GPs have the greatest potential to improve and maintain the health of the population, increase their health literacy, guarantee care for vulnerable groups of citizens, ensure equality of access to care, and make the health system more sustainable and effective¹⁶.

The fact that GPs do not fulfill the gate-keeping role weakens the organization of primary and outpatient care. Policyholders must theoretically be registered with a GP or pediatrician (in the case of children), a dentist and, in the case of women, a gynecologist. Currently, however, patients can visit a specialist directly or go to the hospital without visiting the primary care physician, and they often do so. There is no sanction or incentive that would lead to a primary GP visit. GPs should be given a greater role in gate-keeping and coordination. This would ensure that patients are better directed to the most appropriate place for treatment (specialists or hospitals) when needed. It would also make it possible to reduce the overuse of hospital facilities and encourage a change in their focus on complex and intensive treatment. The prerequisite for the introduction of gate-keeping is to increase competencies and abolish the prescription restrictions of general practitioners.


Based on the outputs of the Analytical Section, the main sub-objectives of this specific objective have been defined in such a way as to pursue, in particular, the following target status:

- Strengthening the competencies of GPs and defining competencies in relation to specialists, improving the coordination of primary care activities and outpatient services; ensuring higher availability of primary care at higher and standardized performance.
- Strengthening motivation factors for securing practices in rural areas, in less attractive areas, increasing the number of GPs in rural and remote areas; facilitating better coordination in establishing pooled practices and strengthening the performance component of remuneration, strengthening service quality.
- Strengthening the role of general practitioners as 'guides to the healthcare system' and increasing the level of health literacy among the population; building a functional *gate-keeping* system – including strengthening the involvement of GPs in prevention programmes and long-term aftercare programmes for chronically ill patients. Targeted, higher risk patient-oriented, preventive examinations can prevent the

worsening of a number of serious medical conditions, or even prevent them altogether.

- Developing a new model of emergency medical services¹⁷ as part of emergency care at the district level.

Primary care in the Czech Republic is at a high level, but the availability of healthcare has been decreasing recently due to the decreasing number of staff, especially in remote locations. Due to this situation, the misuse of emergency services, urgent care, and also EMS to substitute the role of general practitioners in their offices is occurring. The link with primary care is crucial and a reform of the EMS is necessary to ensure the availability of care in individual regions. While the current legislation has an established obligation to service EMS, practical enforcement of this obligation is almost impossible. It is therefore necessary to amend the whole system by legislative means so that any sanctions are effectively enforceable.

Number and title of the specific goal	1.1 Primary Care Reform	
Sub-objectives	1.1.1 Strengthen the competencies of GPs and defining competencies in relation to specialists, improving coordination of primary care activities and outpatient services 1.1.2 Reduce the number of prescription restrictions 1.1.3 Introduction of the standardization of office equipment 1.1.4 Increase the availability of primary care – support for associated practices 1.1.5 Improve the quality of care, including monitoring quality indicators 1.1.6 A change in the funding system with an emphasis on strengthening the procedure component in fixed capitation 1.1.7 The introduction of motivation factors for securing practices in rural areas, and in hard-to-reach and less attractive areas 1.1.8 Optimizing the use of residency programmes and creating a training model (especially GPCA and registering outpatient service providers) 1.1.9 Set up effective procedures in the management of chronic non-infectious diseases 1.1.10 Increase the proportion of the population making use of regular preventive examinations 1.1.11 Build an even network of urgent care and emergency services ¹⁸ (about one for each district),	

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The obligation of providers to ensure EMS is specified by the amendment to Act No. 372/2011 Coll., on health services, 2019/2020.

	1.1.12 Ensure the continuity of medical emergency services to urgent care, at selected providers to low-threshold urgent care
Examples of main measures	<ul style="list-style-type: none"> • Setting the legislative framework of associated practices • Change in reimbursement mechanisms • Creating a model of residency vacancies • Relaxing prescription for general practitioners • Adjusting patient flows between outpatient specialists and general practitioners • Preparation and publication of methodological procedures and departmental methodologies (standards) for the provision of primary care • Educational and learning programmes, certified courses • Preparation for issuing clinical best practices for primary care provision • Preparation of new legislative standards, ministerial decrees and systems regulating personnel and technical equipment of practices and GPs • Development of quality evaluation systems • Establishment of reference networks of primary care providers aimed at promoting health and health literacy • Setting, monitoring and improving the quality of prevention programmes • Use of eHealth tools • Investment support for the creation of urgent care and associated practices • Involvement of care users in the preparation and implementation of healthcare digitalization solutions
Duration of implementation	2021–2030
Guarantor	MoH
Processor	Departments of the MoH: NH
Cooperating institutions	IHIS, SIDC, IPME, NCN NMH, MLSA, MEYS, CMA JEP, Czech Association of Nurses, CMC, regions – regional authorities, non-governmental sector, patient organizations, health insurance companies, Union of Towns and Municipalities of the Czech

	Republic and the Association of Local Authorities, universities, HSP, professional organizations
Link to other specific objectives	<p>1.2 Disease prevention, health promotion and protection; increasing health literacy</p> <p>2.3 Digitalization of healthcare</p> <p>2.4 Optimization of the reimbursement system in healthcare</p>
Indicators	<p>At impact level:</p> <ul style="list-style-type: none"> • Average age of general practitioners • The ratio of outpatient specialist visits to GP visits • Percentage of inhabitants who underwent a preventive examination with a GP in the previous two years <p>At the level of results/outputs:</p> <ul style="list-style-type: none"> • Number of associated practices created • Number of practices meeting the standard of practice • Number of urgent care rooms created • Number of persons supported by residency programmes for practitioners
Initial status	<p>Due to the low competencies of general practitioners (both GPs and GPCAs), and the lacking spectrum of provided services caused by suboptimal development of the field and insufficient use of their regulatory and organizational role for access to costly specialized services, the potential of primary care in the Czech Republic compared to developed EU countries is not well utilized. The main problems are the limitation of competencies, procedures and prescriptions of general practitioners, the absence of clear rules defining relations with outpatient specialists and inpatient facilities, a system of flat-rate reimbursement of outpatient specialists (with regulation to a unique personal identification number), which determines their behaviour in the system and artificially increases the frequency of patient contacts with the healthcare system. This means unnecessary costs of tens of billions of crowns per year and discomfort for the patient. The current standard of offices according to Decree No. 92/2012 Coll. and Decree No. 99/2012 Coll. in terms of the need to strengthen the role of primary care appears to be outdated and inadequate with regard to the current possibilities of GP offices. Another problem of primary care is the huge increase in administration and the decreasing number of GPs in unattractive areas, threatening the availability of medical care.</p>
Target Status	The aim of the primary care reform must be its gradual transformation and strengthening so that it is able to provide the

	<p>widest possible range of quality care, easily accessible to the patient. The extension of competencies must enable the GP to provide the maximum possible care that he/she is professionally and technically capable of. Most of the patient's contacts with the healthcare system must take place as close as possible to his/her place of residence in the general practitioner's office, with whom he/she has a confidential relationship and is familiar with. The only limits to such care should be the general practitioner's technical and professional capacity, not administrative hurdles. The general practitioner should be the patient's guide to the system and his/her advocate, protecting, among other things, against unnecessary medical care. An important goal of strengthening the role of primary care is to guide the patient's movement through the healthcare system so that he/she primarily seeks care from a general practitioner, and to reduce the number of patient contacts with the healthcare system, which is extreme in the Czech Republic and by far exceeds the numbers of neighbouring developed countries. The maximum availability of quality pharmacotherapy in primary care corresponding to the level of developed EU countries is also key. After the implementation of the reform, the effort is to maximally improve the facilities of GP and GPCA offices, to a level corresponding to the standard of primary care in developed EU countries. The trend of the future is the cooperation of two or more physicians in one practice. This will make it possible to ensure better quality and temporal availability of care and the substitutability of physicians, but also to simplify generational changes and maintain continuity of care. However, these so-called associated practices must always be based on the cooperation of fully qualified GPs. Primary care will continue to be reimbursed by a combined capitation-procedure payment that supports the doctor-patient relationship (by being bound by registration), prevents the unnecessary pursuit of points, promotes prevention, also supports the community and social role of the GP and stabilizes the network of primary care physicians. However, the procedure component of reimbursements needs to be strengthened, and reimbursement mechanisms need to be set up to differentiate between practices according to the procedure provided and to motivate better care by enabling the better evaluation of practices providing higher performance and quality. The emergency medical service will be part of the urgent care of selected district hospitals. This will create a state-guaranteed EMS network. The new education system will bring higher motivational elements in the form of residencies to stabilize staff in peripheral locations, as well. Higher health literacy will lead to a more balanced consumption of healthcare.</p>
Sources of funding	State budget, EU funds

	<p>In addition to the internal budget resources of the Ministry of Health, the possibility of international cooperation projects within the EU and projects of domestic grant agencies will also be utilized. The involvement of EU funds in investment is also foreseen for the primary care reform in the area of associated practices and the creation of a model of a functioning Emergency Medical Service.</p>
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3.2. Disease prevention, health promotion and protection; increasing health literacy

The number of persons with a long-term adverse health condition in the Czech population is on the rise. Although demographic aging is a major contributing factor in population morbidity, poor lifestyles and the strong impact of risk factors such as alcohol consumption, tobacco use, poor eating habits, etc., also largely contribute in all population groups, including children and adolescents.

The COVID-19 pandemic has clearly changed the view of the importance of disease prevention and the need to increase the health literacy of the population and has significantly affected the importance of the need to support the development of an existing epidemiological alert system, i.e. the comprehensive and systematic monitoring of all available information on the spread of disease and all conditions and factors which influence this process, in order to establish a system of effective measures to control or eradicate the disease and to predict possible new outbreaks. A necessary condition for solving cases of very high risk of endangering the health of the Czech population by infectious diseases, but also for cases of other non-infectious nature (e.g. mass toxic risks, floods, etc.) is ensuring the readiness of the public health protection system to address cross-border threats.

Many lives can be saved by intensifying efforts to prevent an unhealthy lifestyle. Disease prevention is thus a key tool both for improving the health of the Czech population and for improving the efficiency of the healthcare system and increasing the employment of the population in the national economy.

Disease prevention is an efficient and cost-effective tool for improving population health, nevertheless, it is still not sufficiently used in the Czech Republic's health policies. In its activities and sub-objectives, the specific objective distinguishes primary prevention, which, by eliminating the causes of diseases or increasing the resistance of individuals, aims to prevent disease, and secondary prevention, which aims to stop the development of the disease before the manifestation of clinical symptoms. Thanks to early detection, it is possible to prevent the fatal consequences of many diseases, but also to save money for the expensive treatment of their advanced stages. As primary and secondary prevention practices often depend on the behaviour of people in the population and their own responsibility for their health, increasing the health literacy of the population must also play a key part in preventive health policies so that people can properly understand health information and make appropriate decisions regarding their health and the healthcare used.

The specific objective seeks to create a comprehensive system of health promotion measures and programmes, so as to make a significant contribution to protecting the health of the population from emerging health threats and to increasing health literacy, and further

facilitate access to prevention programmes, and thus contribute to prolonging the health of Czech citizens. This specific objective is closely linked to Specific Objective 2.3, Computerisation of healthcare, as it will combine building a robust database and the use of information tools and information services in the field of infectious diseases and other health threats, educational projects and campaigns, the implementation of targeted health surveys in various areas, including the risk behaviour of the population, and implement programs aimed at reducing the impact of a number of health risk factors, and programs for the screening and early detection of serious diseases.


Specific Objective 1.2 is directly linked to the objectives of the Health 2020 strategy and elaborates in its sub-objectives the specific activities that will lead to the creation of tools and policies contributing to the protection of health and the early detection of diseases, improvement of the health of the Czech population, and support for its health literacy. The analytical study annexed to the Health 2030 Strategic Framework clearly demonstrates the persisting reserves in health investments in the area of disease prevention. Mortality from preventable diseases in the Czech Republic is clearly higher than the EU average, which has a negative impact on the still lower life expectancy and stagnation of its growth in recent years. Disease prevention (including infectious diseases) is thus a key tool both for improving the health of the Czech population and for increasing employment and improving the efficiency of the healthcare system.

This is also reflected in the set sub-objectives of the specific objective justified here, which essentially focus on strengthening health through implementing new technological tools and measures and increasing the competencies of the general public or defined population groups, particularly in the areas of:

- The development of a system of epidemiological vigilance, i.e. the comprehensive and continuous monitoring of all available information on the process of disease spread, and the monitoring of all conditions and factors influencing this process, in order to establish a system of effective measures to control or eradicate the disease,
- Protection of the health of the population of the Czech Republic in the context of environmental risks,
- Prevention of substance use, including tobacco use and excessive alcohol consumption in all population groups, including children and adolescents.

Specific Objective 1.2 also envisages strengthening the role of care providers in building a sufficient level of health literacy, and increasing the availability of primary and secondary prevention programs. The main activities and sub-objectives of this area include, in particular:

- The establishment and development of prevention centres in healthcare facilities, and a positive influence on behavioural health factors (proper nutrition, eating habits, physical activity, sedentary lifestyle),
- The development of the National Health Information Portal
- The optimization and improvement of the quality of population screening programs.
- The introduction of new programs for the early detection of diseases based on scientific knowledge and clearly-defined methodological recommendations.

Number and title of the specific goal	1.2 Disease prevention, health promotion and protection; increasing health literacy	
Sub-objectives	<p>1.2.1. Prevention of the emergence and spread of infectious diseases and setting up supporting information measures for the crisis management system</p> <p>1.2.2 Protection of the health of the population of the Czech Republic in the context of environmental risks (chemical substances, excessive noise pollution, manifestations of climate change, etc.)</p> <p>1.2.3. Prevention of substance use and the implementation of screening, early diagnosis and brief intervention in the field of addictive behaviour</p> <p>1.2.4. Creation of the National Programme for Increasing Health Literacy, implementation of sub-programmes, and the monitoring of health literacy</p> <p>1.2.5. The establishment and development of prevention centres in healthcare facilities</p> <p>1.2.6. The establishment and development of the National Health Information Portal</p> <p>1.2.7. Strengthening the early detection of diseases and risk factors in all segments of care, and the introduction of new early detection programmes</p> <p>1.2.8. Development of an institutional background for optimizing secondary prevention and increasing the quality of existing population screening programs</p>	
Examples of main measures	<ul style="list-style-type: none"> • Development of a data and information base and information system, monitoring of infectious diseases and other emerging threats to the health of the population, and the creation of outputs for use by professionals and the general public • Development of a system of epidemiological vigilance in order to establish a system of effective measures to control or eradicate the given disease and predict possible new occurrences thereof • Development of workplaces focused on the fight against infectious diseases • Creation and implementation of a communication strategy in the field of vaccination • Development of public health registers • Educating the public about the possible harmful effects of the living and work environment • Educating the public about a healthy lifestyle • Creation and implementation of an inter-departmental strategy to reduce the incidence and consequences of antimicrobial resistance • Monitoring the health status of the population of the 	

	<p>Czech Republic</p> <ul style="list-style-type: none"> • Preparation of new legislative standards, ministerial decrees and systems regulating the implementation of prevention programs • Preparation of the issuance of clinical guidelines for screening programs and for the early detection of serious diseases in at-risk groups • Development of systems for the quality assessment, cost-effectiveness and reimbursement of screening programs and the early detection of serious diseases in at-risk groups • Using eHealth tools for health promotion programs • The creation of a National Programme for Increasing Health Literacy and launching its implementation, including defining the monitoring of health literacy • Establishment of prevention centres in healthcare facilities and ensuring their sustainability, their linking to the work and development of the existing network of regional health promotion centres • Supporting non-profit organizations working on health-related issues, including patient organizations focused on helping patients in the area of increasing health literacy • Involvement of care users in the preparation and implementation of solutions in the field of primary and secondary disease prevention, increasing health literacy and citizens' responsibility for their own health • Setting, monitoring and improving the quality of prevention programmes • Early diagnosis and brief interventions in the area of addictive behaviour • The development of the National Health Information Portal • Proposals, pilot verification and testing of new early detection programs
Duration of implementation	2021–2030
Guarantor	MoH
Processor	IHIS CZ, MoH departments: NH, NO, Deputy Minister
Cooperating institutions	NIPH, PHO, IPME, NCN NMH, AHR, MLSA, MoA, MoE, MRD, MEYS, MoI, OG, CMA JEP, HCCZ regions – regional authorities, non-governmental sector, patient organizations, municipalities, health insurance companies, Association of Towns and Municipalities of

	the Czech Republic and the Association of Local Authorities, National Cyber and Information Security Agency (NCISA), medical faculties, professional organizations, Institute for the State Control of Veterinary Biopreparations and Medicines, HSP, NGOs
Link to other specific objectives	<p>1.1 Primary care reform</p> <p>2.3 Digitalization of healthcare</p> <p>2.4 Optimization of the reimbursement system in healthcare</p> <p>3.1 Involvement of science and research in the solution of priority tasks in healthcare</p>
Indicators	<p>At impact level:</p> <ul style="list-style-type: none"> • Share of public expenditures on prevention • Proportion of persons at risk of alcohol consumption • Share of daily smokers • Population covered by a screening program • Number of persons supported <p>At the level of results/outputs:</p> <ul style="list-style-type: none"> • Number of prevention centres created • Creation and visit rate of the National Health Information Portal • Number of innovative health screening programs created • Number of persons supported by health promotion and screening programs • Number of health promotion concepts at municipal and regional levels
Initial status	<p>Every year, more than 1.2 million people die prematurely in EU countries. The Czech Republic has a significantly higher death rate from preventable diseases (285 per 100 000 inhabitants) than the EU28 average (216 per 100 000 inhabitants). This situation is, among other things, the result of the reduced health literacy of the population, a certain resistance of a part of the population to preventive programs, and a high level of risk factors influencing the Czech population. In the case of virtually all major health risk factors, the Czech population is significantly above the average of developed EU countries (heavy smokers, tobacco use in children and adolescents, hazardous alcohol consumption, poor eating habits and insufficient physical activity, pre-obesity and obesity, etc.) For example, the results of the European Health Survey (2014) confirm the unfavourable position of the Czech Republic in the comparison of body weight, where the proportion of overweight individuals in the Czech population is among the highest in the EU. The available data on the health status of the</p>

	<p>Czech population point to the untapped potential of preventive activities to improve the length and quality of life of Czech citizens. International statistics show that expenditures on preventive activities per capita in the Czech Republic is rather low compared to other OECD countries. The system of an exact and methodically guaranteed introduction of new prevention programs in the CZ is merely beginning. The aim cannot be very expensive and nationwide programs, but rather projects targeted at risk groups.</p> <p>In the area of empowering citizens and increasing health literacy, there is also a lack of adequate inter-ministerial cooperation integrating the actions of relevant ministries (MoH, MoF, MRD, MEYS) with the activities of regional offices, and regional and local authorities. It is necessary to harmonize or interconnect various preventive sub-projects, and include the participation of health insurance companies.</p>
<p>Target Status</p>	<p>In the area of strengthening health literacy and citizens' responsibility for their own health, the target is a high level of health literacy compared to the current situation. Health literacy is important for every citizen because at some point in life, everyone needs to be able to find, understand and utilize information about health and healthcare. Caring for one's own health needs to become a part of everyday life. The result of the activities will be to strengthen health by increasing the health literacy not only of the general population, but especially of sub-population groups. Targeted educational activities will enhance the ability to understand not only basic information on, for example, lifestyle factors, but also invitations for examinations, package leaflets, medical staff instructions, basic orientation in the healthcare system, knowledge of common disease symptoms, knowledge of basic human body functions, knowledge of the basic steps of self-care and ensuring self-sufficiency in case of illness. Creating and implementing appropriate communication channels, such as the implementation of the National Health Information Portal, or improving the communication skills of healthcare professionals through activities aimed at processing professional information into generally understandable forms, will also be important.</p> <p>From the point of view of the entire healthcare system, the target state is a functional, legislatively and methodically anchored system of health promotion and protection programs, health literacy and programmes focused on the early detection of serious diseases in risk groups, as well as a functional, legislatively and methodically anchored system of epidemiological vigilance and preparedness of the public health protection system to address current threats to public health. The institutional anchoring of these programmes, such as</p>

	<p>prevention centres, will be carried out in such a way as to ensure their long-term sustainability, including in terms of personnel and financial sustainability. The target situation will also be characterized by the involvement of modern eHealth tools and on-line accessible and fully-guaranteed information services to enhance the health literacy of the population, and the introduction of a system of the responsible preparation, testing and implementation of new screening and early disease detection programmes. In addition, a functional inter-ministerial platform will be built to provide information and strengthen health promotion programmes, particularly at regional and municipal levels, as well as the National Health Information Portal.</p>
<p>Sources of funding</p>	<p>State budget, EU funds</p> <p>In addition to the internal budget resources of the Ministry of Health, the possibility of international cooperation projects within the EU and projects of domestic grant agencies will also be employed. The funding of new screening programmes will only be covered by the project in the verification and testing phase, after which the financial coverage will be transferred to sources of public health insurance.</p>

3.3. Implementation of integrated care models, integration of health and social care, mental healthcare reform

In the Czech Republic, there is an increasing number of people who have been in long-term ill health, which increases their demands on health and social services provided simultaneously, in varying intensities and changing proportions. In particular, it is necessary to focus on the interconnection of the system of health and social services, because within their legislatively and functionally separate provision it is not possible to adequately respond to the changing needs of persons with different degrees of dependence on health and social care. It is necessary to restructure the existing system of health and social services so that people of all ages with different levels of dependence on care have access to a quality, individualized health-social service in all of its necessary forms (from outpatient/field, provided in the patient's own social environment, to bed/stay, usable as a temporary or permanent solution to the patient's life situation). The problem needs to be resolved comprehensively, i.e. including a suitably chosen system of the financing of such a service that includes several resources, proportionate to the possibilities of the system and the needs and possibilities of the patient.

The development of integrated care is closely related to the planned reform of primary care (SC 1.1), which is based on the principle of strengthening the role of general practitioners in the healthcare system. The essence of the integrated approach is the connection of care in inpatient facilities with the level of general practitioners. The primary areas of interconnection of integrated care will focus on oncological, perinatalogical and gerontological care.

In the case of oncological care, it is assumed that the system will be newly set up in such a way so that highly specialized diagnostics and therapy will take place in specialized centres, and in cases of a subsequent stable condition, care is transferred to the level of general practitioners. The goal is to create a system that uses capacity evenly.

This area also includes the implementation of the mental healthcare reform, which was launched in the previous programme period with the support of EU funds on the basis of the approved Psychiatric Care Reform Strategy (2014). Its breadth of scope requires much more time than one programme period. Currently, on the basis of the reform measures implemented so far, it is clear that in order to ensure comprehensive mental healthcare, it is necessary to focus more on the issue of maintaining mental health as such. This means not only completing (mainly in terms of legislation and funding) a functional model for the transfer of clients from large inpatient institutions to the community within the health and social multidisciplinary model of care, but also complementing this care with the aspect of prevention and early intervention. This is why the Psychiatric Care Reform Strategy is seamlessly followed up by the National Mental Health Action Plan (hereinafter "NMHAP"), which is prepared in parallel to the Health 2030 Strategic Framework and elaborates on the necessary continuation of the process of change. Among other things, it deals with changes in relative legislature, proposals for the introduction of innovative forms of funding, the management and planning of the health-social boundaries for individual target groups, improving the quality of care and fulfilling human rights, reducing the high risk of poverty for people with severe mental illness (including addressing interventions in the area of housing, employment, education, etc.), supporting development and changes to the system of providing care for children at risk of or with already developed mental health problems,


increasing the effectiveness of care for patients in protective treatment, care for persons with addictological disorders and, last but not least, interventions in the field of destigmatization.

The main activities and sub-objectives of Specific Objective 2.1 will help address the aforementioned and increasing problems with insufficient aftercare and long-term care, problems related to the aging physician population and the lack of non-medical healthcare workers. In no healthcare system are the resources of care providers unlimited, and optimizing the organization of care brings large potential savings while maintaining a high quality of service.

Models of the integration of care in the activities of Specific Objective 2.1 represent, in particular, the standardization of patient movement through the system of healthcare, of health-social and social services, and ensure their subsequent accessibility in the defined necessary scope and structure. In terms of service structure, the following changes and measures can be expected:

- Optimization of the network structure of providers and the bed fund, the strengthening of home care services, the strengthening of effective models of mobile palliative care, etc.
- Strengthening the integration of primary, outpatient and inpatient care, ensuring the effective monitoring of chronic patients requiring long-term aftercare after the acute phase of treatment. These activities will also inevitably affect the restructuring of the bed fund and the strengthening of after-care and long-term care capacities.
- Strengthening the role of registering GPs and their inclusion in integrated care models (see also Specific Objective 1.1).
- Modernization and renewal of the equipment of cancer centres enabling the uniform use of modern diagnostic and therapeutic methods in the treatment of malignant neoplasms.
- Standardization of health and social care and linkage to social capacities based on clinical guidelines, optimizing the availability of community multi-disciplinary services in selected key segments of medicine.
- Integration of highly specialized care in the acute care system and the strengthening of the so-called secondary centralization of care, especially care for patients with rare diseases. Defining the activities of highly specialized care centres, ensuring the early diagnosis of diseases requiring this type of care.
- Strengthening the communication of different segments of care, especially in determining the correct diagnostic and therapeutic procedure (clinical best practices), strengthening multi-disciplinary teams in hospitals focused on the management of chronic disease treatment, etc.
- Strengthening multidisciplinary care in community or mobile form, shifting patient care into their home environment as much as possible.
- The development of existing Comprehensive Oncology Centres (COC), with an emphasis on innovative diagnostic and treatment procedures (precise individualized

care), strengthening regional cooperation and fixing links in currently existing networks of providers within the regional network with a connection to COCs.

<p>Number and title of the specific goal</p>	<p>2.1 Implementation of integrated care models, integration of health and social care, mental healthcare reform</p>	
<p>Sub-objectives</p>	<p>In the area of the implementation of integrated care models and the integration of health and social care:</p> <p>2.1.1 Creating a consensual strategy for the development of health-social care, the standardization of recommended procedures and methodologies strengthening the functionality of health-social services</p> <p>2.1.2 The implementation of specific and region-specific integrated care models</p> <p>2.1.3 The role of general practitioners in long-term care and in models of integrated care</p> <p>2.1.4 Increasing the availability of integrated health and social services and the integration of health, work and social rehabilitation</p> <p>2.1.5 Improving the quality of life of patients with chronic and incurable diseases</p> <p>2.1.6 Optimizing the bed fund and increasing the availability of after-care and long-term care</p> <p>2.1.7 Strengthening care provided for patients in their homes</p> <p>2.1.8 Programmes to optimize and increase the availability of palliative care in all forms (consultative palliative care in hospitals, mobile specialized PC, home care, hospice care)</p> <p>2.1.9 Programmes strengthening the role of family members and other lay caregivers in long-term care</p> <p>Strengthening the segment of patient organizations and patient-aid organizations</p> <p>In the field of mental healthcare:</p> <p>2.1.11 The improvement of the management and provision of mental health care guided by reliable information and knowledge</p> <p>2.1.12 Ensuring everyone has a comparable opportunity for mental health throughout their lives, especially those most vulnerable or at risk</p>	

	<p>2.1.13 Ensuring that the human rights of persons with mental health problems are fully respected, protected and promoted</p> <p>2.1.14 Ensuring the full availability of mental health services in terms of time, location, capacity and price, ensuring their availability in the community as needed</p> <p>2.1.15 Building mental healthcare systems that function in well coordinated partnerships with other sectors, including equal access to somatic healthcare and social inclusion/the return to society</p>
<p>Examples of main measures</p>	<ul style="list-style-type: none"> • Changes in legislature • Changes in funding • Changes in the management and coordination of care horizontally (ministries) and vertically (ministries, regions, municipalities, users); including effective cooperation on mental and somatic healthcare; the use of information systems and evaluation for the creation of an evidence-based care system, implementation of the processes of the monitoring and improvement of quality of care • Supporting the development of comprehensive and integrated cancer care and balancing disparities in individual regions • Changes in the organization and development of the service network (multidisciplinarity, integrated care, balance care model, recovery model) • In the area of mental health, particularly the further development of mental health centres for persons with severe mental illness, for children with mental illness or at risk of its development, multidisciplinary teams in the field of addiction and forensic issues, and the implementation of de-institutionalization (incl. the development of acute care in psychiatric and pediatric wards of general hospitals and psychiatric hospitals) • Changes in human resources (work with competencies, work organization) and their training • Use of mHealth, eHealth and other ICT systems for the safety and availability of care • Defending the rights of clients and family members, emphasis on respect for ratified international human rights documents, destigmatization and prevention • Modeling and strengthening the involvement of patients (care users) in public health policy processes (development of concepts and strategies, pricing and

	<p>reimbursement, assessment of quality of care, management of health insurers, healthcare provider authorities, etc.)</p> <ul style="list-style-type: none"> • Strengthening the professional and technical capacity of public authorities to involve patients (e.g. MoH, MLSA, SIDC or HTA agencies, etc.) • Education of patient representatives (including peer consultants), as well as the general public • Pilot projects on innovative methods in mental health care delivery¹⁹, the recovery house model, mother and baby unit, promotion of mental health at work, child mental health and psychosocial education in the education system, multidisciplinary teams for people with dementia, for forensic treatment • Use of information systems and evaluation for the creation of an evidence-based care system • Involvement of patients in educational activities in the field of care • Education of specific diagnostic groups of patients • Strengthening the position of the patient in decision-making processes • Investment support for integrated service providers
Duration of implementation	2021–2030
Guarantor	MoH
Processor	Departments of the MoH: NH
Cooperating institutions	IHIS, SIDC, IPME, NCN NMH, NIMH, MLSA, MRD, MoJ, MEYS, MoI, CMA JEP, regions, municipalities, non-governmental sector, health insurance companies, patient organizations, Union of Towns and Municipalities of the Czech Republic and the Association of Local Authorities, Association of Regions of the CZ, NGOs, providers of health and social services, the professional public, the academic sphere, health insurance companies, NGOs

<p>Link to other specific objectives</p>	<p>1.1 Primary care reform</p> <p>1.2 Disease prevention, health promotion and protection; increasing health literacy</p> <p>2.2 Personnel stabilization of the Ministry of Health</p> <p>2.3 Digitalization of healthcare</p> <p>2.4 Optimization of the reimbursement system in healthcare</p>
<p>Indicators</p>	<p>At impact level:</p> <ul style="list-style-type: none"> • Number of beds in long-term and aftercare • Number of patients treated at home <p>At the level of results/outputs:</p> <ul style="list-style-type: none"> • Number of supported providers in the newly set up system of health-social services • Number of palliative care providers supported • Number of implemented mental health prevention programmes • Number of implemented programmes strengthening the role of carers in long-term care • Number of regional integrated care models developed
<p>Initial status</p>	<p>The healthcare system of the Czech Republic is facing the issue of polymorbid patients who repeatedly return to the healthcare system. The needs of these persons are not limited to the health component, but it is also necessary to address their social problems. Integrated care is a comprehensive care system that offers planning, implementation, coordination and evaluation in a holistic view of the patient's individual needs, and provides the necessary degree of support across many levels of his/her life. At the horizontal level, it is perceived as the co-operation of providers on the same level, and includes the intensive co-operation of GPs and specialists with multidisciplinary teams. At the vertical level, care is provided by different providers at different levels of care. A separate system of health and social services, the interconnection of which is cumbersome, often with legislative obstacles, is characterized by insufficient saturation of the health and social needs of patients with varying degrees of necessary support. A number of patients are already excluded from the system, seeking optimal health and social services in vain, with a lack of information. Patients cannot be sufficiently involved in decision-making. The effective organization of work is prevented by the absence of a contact point, or a service coordinator or patient guide. There are systemic barriers to the establishment, development and operation of services with inter-ministerial overlapping in the clients' own environment. Legislation and funding models of the health and social sector allocate resources (financial and human) to</p>

	<p>institutions where care is more costly and, in particular, greatly reduce the quality of life of institutionalized persons, since they deny them the right to live in their own social environment.</p>
<p>Target Status</p>	<p>A functional and legislatively interconnected system of health and social services for all age categories of patients, enabling the individual setting of health-social services according to the current needs of the patient. The system is fully transparent to patients (in terms of entitlement to care and conditions of provision) and the provider (in terms of creating conditions for provision) and meets officially established quality requirements, which are reviewed regularly. Health-social services are available locally and temporally to all needy patients regardless of their age, gender or social status. Contact information and support points are created for patients, their families and loved ones, with links to health-social service providers.</p> <p>In the area of the integration of health and social services: by 2030, all Czech citizens in a long-term adverse state of health (due to chronic and incurable diseases, aging, etc.) are guaranteed equal opportunities to use health and social services simultaneously, in varying intensities and proportions according to their needs and in all necessary forms (from outpatient, field, provided in their own social environment, to bed/stay, usable as a temporary or permanent solution to the client's life situation).</p> <p>The aim of integrated care is therefore to ensure the optimal availability of specialized and super-specialized care for patients with chronic and long-term illnesses, e.g. by supporting the development of comprehensive and integrated oncological care and balancing disparities in individual regions. Support for this care would also be reflected in the improvement of healthcare for patients with less frequent or rare diagnoses and, last but not least, would contribute to the greater availability of specialized aftercare (geriatric, rehabilitation and palliative care) in order to improve the quality of life of chronically and terminally ill patients.</p> <p>In 2030, quality mental healthcare is provided to all people at risk of mental illness indiscriminately, accessible both in terms of location and range of services, based on a multidisciplinary approach, coordinated and comprehensively addressing all needs, effective and innovative, with an emphasis on rehabilitation and an early return to normal life, and above all on a respect for human rights. In the general population, mental illnesses are "normalized", perceived as common and curable. Attention is paid to prevention and early intervention, which will prevent the</p>

	<p>development and eventually the chronification and long-term consequences of mental health problems.</p> <p>Patients and users are involved in the processes of creating health policies and legislation, where they are a partner to other stakeholders.</p>
Sources of funding	State budget, EU funds, EEA funds, and other donors.

3.4. Personnel stabilization of the Ministry of Health

The societal transformational changes that have taken place since 1989 have laid the roots of the problems that have significantly weakened the Czech healthcare system in the field of human capital over the past few years. A number of determinants are reflected in the unfavourable personnel situation, not only in the case of physicians, but also general nurses. The aging of physicians can be mentioned as a universal factor (especially in the primary care segment – practitioners, dentists, etc.), which, among other things, causes the unavailability of some professions in rural areas or reduces the motivation and willingness of young people to work in healthcare and the nursing profession. The young generation often prefers to work in other areas of healthcare that do not require such a high level of responsibility and offer higher remuneration, more favourable working conditions (single-shift operation, free weekends, etc.) and work in a less demanding and stressful environment. Sub-measures were introduced in 2008, e.g. in remuneration (upgrading to higher salary classes for the purpose of increasing the earnings of state employees in healthcare), in professional development (support for modern vocational training, creation of professional development programmes); professional independence (legislative changes in the exercise of the profession of practical nurse, in the area of a higher level of education, without increasing competencies). Nevertheless, these changes have failed to sufficiently reflect needs in the long run, and the health sector is currently facing the challenge of securing qualified professionals in all segments of healthcare. Personnel stabilization in healthcare is therefore a primary and urgent priority of health policy, as well as the management and provision of health services and adequate coverage of the health needs of Czech citizens. Longer-term plans for personnel stabilization are aimed at recognizing the living needs of healthcare workers, reconciling work and family life, and increasing the efficiency of the system (changing the structure of healthcare provision – with a greater emphasis on primary care, the use of e-health, the introduction of integrated care) and improving the work environment in healthcare, increasing the attractiveness of the healthcare profession, and various types of motivational incentives and tools.

However, the health sector urgently needs an adequate, conceptual and sustainable solution. A conceptual solution should be based on a good understanding of the current situation, both short and long-term trends, and be able to derive prospectively effective measures from them.

In connection with the COVID 19 pandemic and the expectation of possible future epidemiological threats, it was necessary to consider the reprofiling of the staffing of the Czech healthcare system, including the staffing of public health protection authorities.

Number and title of the specific goal	2.2 Personnel stabilization of the Ministry of Health	
Sub-objectives	<p>2.2.1 Implementation of a long-term strategy of stabilization and development of human resources in healthcare until 2030</p> <p>2.2.2 Improving the organization and continuity of</p>	

	<p>postgraduate training for medical professionals</p> <p>2.2.3 Promoting coordinated approaches to lifelong learning for healthcare professionals</p> <p>2.2.4 Defining the relationship between improving and increasing the education of healthcare workers and the system of financial remuneration</p> <p>2.2.5 Establishment of a national information system for monitoring the existing and planning the required personnel capacities in healthcare at the national, regional and local level</p> <p>2.2.6 Strengthening the position of non-medical healthcare workers in the healthcare system, support for their education and the development of competencies in their independent roles</p> <p>2.2.7 Improving the prevention of negative impacts of the mental and physical burden for healthcare workers, e.g. through psychosocial support and supervision</p> <p>2.2.8 Personnel reinforcement of insufficiently occupied fields of medical staff</p> <p>2.2.9 Staff reinforcement of public health protection authorities</p> <p>2.2.10 The introduction of motivation factors for securing practices in rural areas, and in hard-to-reach and less attractive areas</p> <p>2.2.11 Increasing the proportion of recommended clinical procedures, competencies and educational plans adapted to current conditions and field development</p>
<p>Examples of main measures</p>	<ul style="list-style-type: none"> • Preparation of methodologies, content and evaluation of incentive programmes for the study of medical fields (non-medical health professions and physicians) • Preparation of methodologies, content and evaluation of incentive programmes to support the opening of practices of primary care in risk areas of the Czech Republic • Development of a new information system enabling the planning of measures to strengthen the personnel stabilization of healthcare and health-social services • Methodological recommendations and normative programmes reducing the administrative burden on healthcare workers • Creation of tools for education system management

	<ul style="list-style-type: none"> • Creation of recommended clinical procedures, competencies and educational plans adapted to the current conditions and development of the field • Measures in the field of the organization of postgraduate education • Creation of an information system for the organization of the postgraduate education of healthcare workers
Duration of implementation	2021–2030
Guarantor	MoH
Processor	Departments of the MoH: Deputy Minister, NH, NE, State Secretary
Cooperating institutions	IHIS, IPME, NCN NMH, PHO, NIPH professional chambers, MEYS, health insurance companies, Union of Towns and Municipalities of the Czech Republic and the Association of Local Authorities, NCISA, HSP, MLSA, universities, Mladí lékaři z.s. (registered Young Physicians association), trade unions, regions, municipalities, medical colleges, Czech Association of Nurses
Link to other specific objectives	<p>1.1 Primary Care Reform</p> <p>1.2 Disease prevention, health promotion and protection; increasing health literacy</p> <p>2.1 Implementation of integrated care models, integration of health and social care, mental healthcare reform</p>
Indicators	<p>At impact level:</p> <ul style="list-style-type: none"> • Average age of general practitioners • Number of physicians/healthcare workers (general nurses, non-physicians, etc.) per 1 000 000 inhabitants per self-governing unit <p>At the level of results/outputs:</p> <ul style="list-style-type: none"> • Number of graduates of specialized education (number of attested persons) per year • The balance of the outflow and inflow of various groups of workers in healthcare. The number of created clinical procedures, competencies and educational plans adapted to the current conditions and the development of the field • The number of graduates of medical faculties and medical secondary schools who, after graduating, go into

	practice in the Czech Republic
Initial status	<p>The staffing of healthcare services is one of the weak points of the public health system. It is characterized in particular by an insufficient number of general practitioners (including GPs for children and adolescents) and the very limited availability of primary and dental care, especially in remote areas of the country, which continues to contribute to regional differences in the quality of life of the population.</p> <p>The share of outpatient specialists and general practitioners in the Czech Republic has been highly uneven over the long term. The number of specialist outpatient clinics is up to 2.5 times higher (in relation to the number of general practitioners) than in developed OECD countries. Differences in the available capacity of outpatient specialists vs. GPs are significant among the regions of the Czech Republic – a very high proportion of outpatient specialists is apparent in large cities, especially in Prague. In addition, demographic aging is a major problem for general practitioners, which increases the risk of closing offices due to retirement.</p> <p>Dental care, which is characterized by an uneven geographic distribution of dentists, suffers the same problem of under-capacity in certain areas. Large agglomerations have more than enough dentists, whereas in peripheral regions dental care is not adequately secured, as pointed out by regional governments and the policyholders themselves, who have trouble finding “their dentist”.</p> <p>Another problem of personnel capacity in the Czech healthcare system is the lack of nurses. The most risky trend is the decrease in the number of nurses in acute care. The departure of nurses is affecting shift operations in hospitals and acute inpatient care. It could be stated that there is a lack of nurses in hospital care in general.</p> <p>Healthcare is highly demanding in terms of professional human work. Therefore, the personnel instability of the health sector may become one of the limiting factors of publicly available healthcare.</p>
Target Status	<p>The objective of staff stabilization in the health sector is to ensure sufficient capacities of all staff, both medical and other non-medical health professions. It is not only about ensuring adequate numbers, but also about structure, occupational distribution and nationwide coverage. This includes the long-term sustainable development of personnel capacities in the</p>

	<p>Czech healthcare system.</p> <p>The result of the activities carried out in this specific objective is to set up changes in personnel management and the coordination of healthcare consisting in the creation and implementation of a long-term strategy of stabilization and development of human resources in healthcare. In terms of reducing regional disparities, this means setting up measures that will reduce differences in this area (support for motivational activities of physicians and other staff to practice in remote areas, etc.). In this respect, setting up a system of education and subsequent remuneration to ensure the maintenance of healthcare is also crucial.</p> <p>In terms of remuneration, the target status is a remuneration model (salary and wage growth) with well-set incentives, also with regard to optimizing reimbursement mechanisms (see also Specific Objective 2.4).</p> <p>In the area of healthcare education, the aim is to set up a long-term education system and to strengthen systemic and educational tools for the sustainable development of healthcare, taking into account the expected development of civilization diseases and population aging.</p> <p>Increasing the prestige of healthcare professions, including strengthening the competencies of general nurses, will contribute to staff stabilization in the health sector. This, together with the remuneration system and other incentive factors, should also lead to increased interest in health professions. The realization of this specific objective will lead to greater support of healthcare professions in terms of care for their long-term professional growth, but also to establishing the elements of prevention of the negative impacts of mental and physical stress for healthcare workers.</p> <p>The target status is sufficient personnel capacities of physicians and non-medical health professions as a condition of the availability and quality of health and health-social services.</p>
Sources of funding	state budget, health insurance funds, EU funds

3.5. Digitalization of healthcare

The digitalization of healthcare is one of the priority areas that currently have the highest potential for improving the health of the Czech population and which is also key to coping with current trends in socio-economic development, i.e. demographic changes and rapid technical and technological progress. The digitalization of healthcare will, inter alia, support the reform of and access to health services, and digital technology will enhance the ability of individuals to care for their own health while promoting the overall effectiveness of the healthcare system. Effective digitalization will facilitate the transition to integrated, individual-centred care models and facilitate the transition from treatment to prevention. Digital technologies and innovation will facilitate the achievement of strategic public health objectives. Innovative digital solutions will help promote the health and quality of life of citizens and enable more efficient ways of organizing and delivering health and social services.

Digital solutions in the field of health and care will help to improve the quality of life for millions of citizens and radically change the way health and care services are delivered to patients if they are appropriately designed and implemented in a cost-effective way. Digitalization can support the continuity of cross-border care. It can support the reform of healthcare systems and their transition to new care models that address people's needs and allow the transition from hospital-based systems to more community-based and more integrated care structures. Digital technologies should be seen as an integral part of health and care and should be directed towards the wider objectives of health systems. Digital tools can make use of scientific knowledge and help citizens stay healthy, thus helping to ensure they do not become patients. They also have the potential to allow for the better use of health data in research and innovation to promote personalized healthcare.

Health records with health service providers will be created, stored and shared electronically through a robust IT infrastructure with a high level of cyber security; the introduction of electronic health records and their exchange will require the highest possible standards of information security and privacy. Patient data must be protected and secured, with an emphasis on protecting the privacy of citizens, but also on protecting human rights and ethical principles. Digitalization will become a driving force in the development of integrated care concepts. Every citizen who does not decide otherwise will have a shared personal electronic health record; digital technologies will be a ubiquitous part of care for health and the entire healthcare system.

Legislative support and material support for standardization in the field of health record keeping and sharing, and in mobile eHealth and telemedicine, including the certification of information systems and digital health services, will make a significant contribution to the development of the IT healthcare solutions market.

From a health crisis preparedness perspective, digitalization is a key area for crisis planning and crisis response, including the ability to manage pandemics and cyber attacks on the health system. In these situations, the possibility of interconnecting key data sources to protected information systems of the state administration must be guaranteed, e.g. interconnection with the Crisis Management Information System or connection to European notification systems.

Healthcare, lifestyles and economic stability face an unprecedented challenge due to public health crises caused by pandemics, floods, cyber attacks and other emergencies. Digital technologies play an important role – they provide an important tool for informing the


public and helping public authorities and healthcare organizations during the exchange of health information.

A necessary condition for managing these crisis situations is the mapping of the processes of individual entities involved in crisis management, operating, for example, as part of public health service, central registration systems, telecommunications operators, force units, the integrated rescue system and information systems of individual regions.

It is also necessary to support solutions based on telemedicine and mHealth, which will facilitate healthcare in situations where it is objectively not possible or desirable for there to be physical contact between the patient and the healthcare professional.

Current developments in the world categorically present us with the need to increase the resilience of the healthcare system to cyber threats, when attackers exploit higher vulnerabilities of healthcare facilities and healthcare system management, especially in crisis situations caused by pandemics, floods or other emergencies in the area of disaster medicine and crisis management in healthcare.

All activities and measures under the specific objective Digitalization of Healthcare will be carried out with due regard for ethical principles, taking into account the human rights aspect.

Number and title of the specific goal	2.3 Digitalization of healthcare	
Sub-objectives	<ul style="list-style-type: none"> 2.3.1 Development and implementation of the concept of healthcare digitalization²⁰, institutionalization of eHealth 2.3.2 Development of a central infrastructure for sharing medical documentation, guaranteed and secure communication and exchange of information in healthcare 2.3.3 Development of a system of providing authoritative data services, departmental authoritative registers and a guaranteed data model 2.3.4 Development of the National Health Information System 2.3.5 Development of the National Health Information Portal 2.3.6 System administration with the development of an eHealth services catalog 2.3.7 Promoting the use and standardization of eHealth tools 	

Digital health in general is "an area of knowledge and practice associated with any aspect of adopting digital technologies to improve health, from creation to operation". This definition is in line with WHO EB142/20 of 2017 and also includes eHealth. The term "digital healthcare" is often used today as a broad umbrella term encompassing eHealth as well as emerging areas, such as the use of advanced computational sciences ("Big Data", genomics and artificial intelligence).

	<p>(tools for standardizing the digital healthcare environment, interoperable environment for users of common shared eHealth services in healthcare)</p> <p>2.3.8 Promoting the use of new digital technologies and practices in personalized medicine, home care, integrated care</p> <p>2.3.9 Support of the use of artificial intelligence in healthcare and the implementation of services based on it</p> <p>2.3.10 Developing the scientific research and innovation base for healthcare digitalization and developing the knowledge base of digital healthcare</p> <p>2.3.11 Practical application of models of the safe sharing of medical records, the application of Blockchain technology and related concepts, utilization of Big Data concepts</p> <p>2.3.12 Promotion of mobile health technologies (mHealth) and telemedicine at all levels of healthcare provision, especially for end-users (hospitals, clinics, patients).</p> <p>2.3.13 Development of platforms for the communication and coordination of the public administration, industry and the academic sphere for the purpose of developing digital services in the health sector and healthcare</p> <p>2.3.14 Programmes for the development of general and specific digital literacy of healthcare workers</p> <p>2.3.15 Programmes to strengthen the building of trust in digital health services among citizens and healthcare professionals</p>
<p>Examples of main measures</p>	<ul style="list-style-type: none"> • Development and implementation of the healthcare digitalization concept, including the institutionalization of eHealth • Implementation of National eHealth Strategy goals and Action Plan measures • Fulfillment of the goals of the government programme A Digital Czech Republic (Digital Economy and Society, information concept of A Digital Czech Republic) • Realization of the intentions of the implementation plans of the government programme A Digital Czech Republic • Promoting the use and standardization of eHealth tools (tools for standardizing the digital healthcare environment, interoperable environment for users of common shared eHealth services in healthcare) • Completion of the cornerstones of healthcare computerization (national healthcare information portal, projects addressing the electronic identity of healthcare professionals and patients, professional certificates, departmental authoritative and reference registers, integrated data interface of the department,

	<p>computerization of healthcare documentation; the development of eHealth services related to ePrescription, eSickness, patient summaries, including support for cross-border care support, telemedicine and mHealth)</p> <ul style="list-style-type: none"> • Supporting solutions for patients' access to and management of their own health data • Support for infrastructure development and for the sharing of medical documentation, guaranteed and secure communication and the exchange of information in healthcare • Support for the development of a system of providing authoritative data services, departmental authoritative registers • Support of and research into the use of new digital technologies in the health sector • Support and research into mobile health technologies (mHealth) and telemedicine at all levels of healthcare delivery, especially for end users (hospitals, ambulances, patients) • Support and research into the use of artificial intelligence in healthcare and the implementation of services based on it with regard to ethical, human rights and legislative dimensions, including taking into account foreign practice • Legislative support and real support for standardization in the field of the keeping and sharing of health records • Change in legislature • Promoting and increasing digital health literacy and the use of modern technologies in healthcare • Involvement of care users in the preparation and implementation of healthcare digitalization solutions
Duration of implementation	2021–2030
Guarantor	MoH
Processor	Departments of the MoH: NH
Cooperating institutions	IHIS, SIDC, IPME, NCN NMH, NIPH, PHO, MoI, MLSA, MEYS, MoF, health insurance companies, NCISA, Union of Towns and Municipalities of the Czech Republic, regions, health service providers, patient organizations, NGOs
Link to other specific objectives	<p>1.1 Primary care reform</p> <p>1.2 Disease prevention, health promotion and protection; increasing health literacy</p> <p>2.1 Implementation of integrated care models, integration of</p>

	<p>health and social care, mental healthcare reform</p> <p>2.2 Personnel stabilization of the Ministry of Health</p> <p>2.4 Optimization of the reimbursement system in healthcare</p>
Indicators	<p>At impact level:</p> <ul style="list-style-type: none"> • Number of eHealth portal solutions created (eHealth medical records) <p>At the level of results/outputs:</p> <ul style="list-style-type: none"> • Number of interoperable shared services in place • Number of digital health services in place • Number of modernized eHealth systems created with new features • Number of supported systems with advanced features • Number of developed telemedicine solutions and mobile health technologies (mHealth) • Number of registered/authorized portal users
Initial status	<p>The National eHealth Strategy 2016-2020 is a medium-term strategic document that, based on the knowledge of Czech healthcare, social conditions and development trends at the EU and CZ level, formulates strategic goals for a minimum five-year period and a programme for their support, and is based on the National Strategy for the Protection and Promotion of Health and Disease Prevention, Health 2020. The strategy defines a set of goals and measures to which the individual implementation projects are linked.</p> <p>Measures from the adopted Action Plan for the National E-Health Strategy 2016–2020, which is the implementing document of the Strategy, are realized. The point of the aforementioned Strategy plans will be to elaborate their objectives into tasks, projects and activities and to define procedures, an implementation structure, a schedule, financial resources, a budget, and to determine the method of evaluation of meeting the objectives and fulfilment of measures, incl. a set of indicators and deadlines.</p> <p>A draft version of the Act on eHealth is under preparation. The reason for the preparation of separate legislation on healthcare digitalization is the need to reflect further developments in healthcare computerization in order to lay the foundations of systemic solutions using existing processes and healthcare structures with the gradual start-up of individual elements. There is still a lack of legislation in the Czech Republic defining the main components of eHealth, authoritative sources of eHealth data, rights and obligations of subjects in the eHealth system and, last</p>

	<p>but not least, standards of eHealth documentation, the rules for its sharing and an overall enabling of effective information sharing across healthcare.</p> <p>Effective digitalization in healthcare cannot be carried out without public support being available to all subjects involved in healthcare, from small primary care outpatient clinics, laboratories, clinics or pharmacies, to large regional and university hospitals. The effectiveness of healthcare is dependent on the weakest link in the entire care system and intervention must be directed at the whole system, at everyone who it is necessary to involve in the digital exchange and sharing of citizens' health data, in order to use all the health records needed to ensure the continuity of care.</p>
<p>Target Status</p>	<p>The post-2020 period will be characterized by the emergence of new digital technologies and practices in the field of personalized medicine, clinical applications of artificial intelligence, practical applications of shared health record models, including the application of Blockchain technology and related concepts, and the use of Big Data concepts. Mobile health technologies (mHealth) and telemedicine are increasingly involved in healthcare. Digitalization will play a key role in developing the health literacy of the population. Particular efforts will need to be made to develop both general and specific digital literacy for health professionals and to build trust in digital health services among citizens and health professionals. Digitalization in healthcare will:</p> <ul style="list-style-type: none"> • increase support of the reform of and access to healthcare services, • strengthen the ability of individuals to care for their own health, • support the overall efficiency of the healthcare system, • effective digitalization will aid the transition to integrated, individual-centred care models and facilitate the transition from treatment to prevention, • digital technologies and innovation will facilitate the achievement of strategic public health objectives. <p>Health records with health service providers will be created, stored and shared electronically through a robust IT infrastructure with a high level of cyber security and with a strong emphasis on protecting the privacy of citizens. Digitalization will become a driving force in the development of integrated care concepts. Every citizen who does not decide otherwise will have a shared personal electronic health record, digital technologies will be a ubiquitous part of caring for health and the entire healthcare system.</p>


	Legislative support and material support for standardization in the field of health record keeping and sharing, and in mobile eHealth and telemedicine, including the certification of information systems and digital health services, will make a significant contribution to the development of the IT healthcare solutions market.
Sources of funding	State budget, EU funds, government Digitalization of the Czech Republic 2018+ programme EC financial mechanisms – Digital Europe Programme (DEP), ERDF/EU funds, Connecting Europe Facility (CEF) programme, The Invest EU Programme (InvestEU), Structural Reform Support Programme, Horizon Europe (HE), eHealth Network (Joint Action)

3.6. Optimization of the reimbursement system in healthcare

Ensuring long-term sustainable financing of the Czech healthcare system is a fundamental task that conditions the availability, quality and results of healthcare and health and social care for all citizens of the Czech Republic. It is an area that primarily requires inter-ministerial cooperation, as sustainable transparent healthcare funding is not only a question of the volume of resources on the revenue side of public health insurance, but also involves increasing the efficiency of services through changes in competencies (the responsibility of the Ministry of Health), revenue and expenditure planning and increasing stability through multi-source funding (cooperation with the Ministry of Finance), as well as necessary changes in the organization of healthcare services (cooperation with the Ministry of Regional Development), including the planning of services on the health-social boundary (together with the Ministry of Labour and Social Affairs). The planned provision of a sufficient volume and reimbursement structure requires a robust information base including predictive models validated directly in the practice of health service providers; for this reason, a reference network of providers monitoring real cost data is essential. The area of the reimbursement of health services is also associated with the frequent assertion of interests, either by individual segments of care or by providers – for this reason it is essential that macroeconomic planning be based on guaranteed departmental data, verifiable through the eHealth system.

In addition to the aforementioned dimensions, the planned optimization of the healthcare reimbursement system must increasingly accentuate the exact assessment of new health technologies, medicines and innovations in diagnostic and clinical guidelines. These are not only models assessing the impact of innovations on the budget; given the limited financial resources it is necessary to implement exact methodologies for the critical evaluation of new technologies, including cost-effectiveness. By implementing these methodologies, the state guarantees its citizens the deliberate spending of public funds only on such technologies that will bring the promised effect and guarantee the safety of treated patients.

The sub-objectives of the specific objective are directly linked to the results achieved in the solution of selected projects under the Health 2020 programme, in particular the DRG RESTART Employment Operational Programme. The newly built DRG system needs to be further optimized and developed. The aging population of the Czech Republic and the associated increase in the morbidity and the number of elderly people in need of long-term care require a new system similar to DRG for the after-care and long-term care segment. Implementation of a strictly managed reimbursement system for this care, including various models of community care and palliative care, will aid the necessary strengthening of capacities and increase accessibility for those Czech citizens in need.

Number and title of the specific goal	2.4 Optimization of the reimbursement system in healthcare	
Sub-objectives	<p>2.4.1 Creation of an information system based on the inter-ministerial integration of economic data relating to all relevant dimensions of public health insurance revenues and expenditures</p> <p>2.4.2 Creation and application of a new departmental concept of reimbursement of all healthcare segments, which will enhance the transparency, verifiability and planned sustainability of the healthcare financing system</p> <p>2.4.3 Validation and optimization of public health insurance revenue and cost predictions based on a comparative model of different reimbursement systems</p> <p>2.4.4 Ensuring the development, optimization and sustainability of the DRG-based acute bed care reimbursement system</p> <p>2.4.5 In relation to the outputs of activities fulfilling SO 1.1, optimization of the system of reimbursement in primary care with an emphasis on motivational, performance-enhancing components and the creation of models setting the balance of reimbursement in various segments of outpatient care</p> <p>2.4.6 Creating a classification and system to standardize and optimize the system of the reimbursement of healthcare procedures</p> <p>2.4.7 Preparation and application of models for the prediction of economic impacts of new technologies and the introduction of innovations in healthcare into practice</p> <p>2.4.8 Development of models for the evaluation and cost optimization of health and social services, and the economy of the health-social boundary of the system</p> <p>2.4.9 Development of sustainable funding models for integrated care, community psychiatric and home-care systems</p> <p>2.4.10 Extending the cost-effectiveness assessment of new technologies (HTA) to include non-drug innovations and technologies</p>	
Examples of main measures	<ul style="list-style-type: none"> • Legislative changes, preparation of methodologies, content and evaluation of various reimbursement systems • Optimization and methodical development of the DRG system for acute inpatient care 	

	<ul style="list-style-type: none"> • Optimization of the reference network of acute bed care hospitals • Establishment and development of a reference network of after-care and long-term care providers to optimize the reimbursement system • Establishment and development of a reference network of primary care providers to optimize the reimbursement system • Building a robust data base for assessing the effectiveness of reimbursement, using guaranteed reference data from eHealth systems • Development and implementation of methodologies for long-term macroeconomic planning of revenue and expenditure aspects of the health budget • A model of patient (care user) involvement in public health policy processes • Strengthening the professional and technical capacity of public administration bodies to involve patients • Development and implementation of methodologies for the critical evaluation of cost-effectiveness and benefits of innovations and modern technologies in healthcare • Development of models of a long-term sustainable system of providing healthcare services in integrated care and community care models
Duration of implementation	2021–2030
Guarantor	MoH
Processor	IHIS CZ, MoH departments: NE, NH
Cooperating institutions	MoF, MRD, health insurance companies, Czech Chamber of Commerce, universities and academic institutions, NCISA, Union of Towns and Municipalities of the Czech Republic, NGOs
Link to other specific objectives	<p>1.1 Primary Care Reform</p> <p>2.1 Implementation of integrated care models, integration of health and social care, mental healthcare reform</p> <p>2.3 Digitalization of healthcare</p> <p>3.1 Involvement of science and research in the solution of priority tasks in healthcare</p>
Indicators	At impact level:

	<ul style="list-style-type: none"> • Share of flawlessly classified hospitalization cases according to the CZ DRG model, accepted by health insurers for reimbursement • Number of datasets/data models • Number of models optimizing care reimbursement <p>At the level of results/outputs:</p> <ul style="list-style-type: none"> • Number of methodologies, normative and legally guaranteed procedures • Number of models optimizing care reimbursement • Number and size of providers' reference networks • Number of people supported by educational activities focused on coding healthcare services, reporting services for reimbursement and optimization of the economic management of providers • Number of visitors to preventive programmes supported by the established system of primary care reimbursement
Initial status	<p>The Czech healthcare sector is under considerable economic pressure due to the increasing demand for wage and salary increases, the density of the network of providers with often suboptimal capacity distribution and emerging new technologies, including very expensive gene therapies. A robust reference database for long-term macroeconomic financial needs planning is not provided. Multi-source funding is not sufficiently implemented to bring more stability to the healthcare services system. Models for the sustainable financing of programmes to improve the effectiveness of the delivery of healthcare services, such as community care, home care, and the planned financing of preventive and early detection programmes of serious illnesses is not developed.</p>
Target Status	<p>Fulfillment of the indicators aiming to meet all the set sub-objectives will lead to the construction of a completely new, transparently published data and model background for the management and planning of the reimbursement system. Key macroeconomic characteristics of all healthcare segments will be published in the form of reference departmental statistics. Data collection in the reference networks of providers, and in particular in the network of hospitals maintaining and cultivating the DRG system, will be available to all relevant entities in the sector and will be used for both short and long-term predictions and strategic models of funding needs. Hitherto non-existent data bases cultivating the reporting and valuation of procedures and health</p>

	services in general will also be available for inter-ministerial cooperation. Health insurance companies will share the same data-validated information base for reimbursement system planning with the management of the Ministry and healthcare providers.
Sources of funding	State budget, EU funds, health insurance funds and the state budget for healthcare

3.7. Involvement of science and research in the solution of priority tasks in healthcare

Czech healthcare is on a very good level. Maintaining and further improving it is fundamentally related to supporting and applying research, both basic and applied. Science and research contribute to the elucidation of the origin and development of diseases, give rise to new diagnostic and therapeutic methods, and prevent the most serious diseases, or contribute to the prevention of epidemics. The use of research results leads to the introduction of innovative methods and procedures in healthcare and further contributes to improving the health status of the population.

Other benefits of science and research are the support of the effectiveness of diagnostic and therapeutic procedures, and the introduction of innovative methods and procedures in healthcare. This is linked to the need to further develop existing top research healthcare facilities, as well as the need to improve conditions for scientists, in particular the wider involvement and support of young researchers (sufficient financial rewards, flexible working arrangements, etc.). The research results are then put into practice also in the postgraduate education of physicians and other healthcare workers.

Cooperation with top international workplaces and teams and creating conditions for such cooperation play an important role in the field of science and research. Czech healthcare research must keep pace with the development of global science. Promoting excellence as well as public-private cooperation is equally important in the field of healthcare research.


Organizationally, it is necessary to seek ways to centralize and concentrate research and treatment activities. Research in this area should seek better links with the local industry. The essence of this strategic challenge is the existence of dynamic, unbalanced relationships between rapid advances in medical science, changing living and working conditions in human life, and the inertia of human and institutional behaviour; these factors – often years later – will be reflected in the health of the Czech population. At the same time, good health is a basic prerequisite for the satisfactory application of individuals in society and economy.

Thousands of new chemicals are released into the environment each year and we do not precisely know their health or cumulative effects. Other negative factors include noise, radiation and human exposure to pollutants in water, food or air. Not to mention the speed of technological change and the higher levels of stress associated therewith. This will probably create previously unknown health risks associated with the modernization and development of society (nanotechnology, genetically modified organisms, etc.). A pandemic of new infectious diseases is a constant threat. Climate change will also pose new challenges, with rare or uncommon diseases occurring in the Czech Republic, and vulnerable groups (such as cardiac patients, children and the elderly) will be more vulnerable to heat waves.

On the contrary, advances in medical knowledge in genetics and other disciplines will lead to a better understanding of the mechanisms of disease development and the potential for preventing, treating or replacing damaged or non-functional organs with new ones. A major role will be played by the ability of the healthcare system to adapt to these changes so as to guarantee all citizens access to the support and protection of their health, in order to strengthen their motivation for a healthy lifestyle and to apply the rules of effective disease prevention consistently.

The basic and main objective is to ensure an internationally comparable level of health research and use of its results to improve the health of the Czech population and to meet current health needs in the country.

The main tools for the implementation of Specific Objective 3.1, Involvement of science and research in the solution of priority tasks in healthcare, will be targeted support programmes to support applied health research under the auspices of the MoH.

Number and title of the specific goal	3.1 Involvement of science and research in the solution of priority tasks in healthcare	
	<p>Due to the specific nature of health research, this area is not covered by the implementation plan, but by the concept of health research, which will be based on the priorities of the National Policy for Research, Development and Innovation of the Czech Republic 2021+ under the Government Council for Research, Development and Innovation.</p> <p>At the time of the preparation of the Strategic Framework 2030, the Concept of Health Research until 2022 was still in force, following up on the National Priorities of Oriented Research, Experimental Development and Innovation. However, work was simultaneously underway on the draft National Policy for Research, Development and Innovation of the Czech Republic 2021+ (NP R&D&I 2021+). The draft national policy, including the proposal of expenditures from the state budget in this area until 2026, was approved in April 2020.</p> <p>The concept of health research for the period after 2022, through which Specific Objective No. 3.1, Involvement of science and research in the solution of priority tasks in healthcare, will be fulfilled, will be elaborated after approval (NP R&D&I 2021+) by the government.</p> <p>In addition to the priorities listed in the NP R&D&I 2021+, the concept will focus primarily on:</p> <ul style="list-style-type: none"> • Research in fields focused on new diagnostic and therapeutic methods • Verification of new effective procedures in primary prevention • Improving the diagnosis and treatment of diseases related to climate change • Behavioural research in relation to health and health literacy • Preclinical and clinical research in the field of biotechnology 	

	<ul style="list-style-type: none"> • Search for new molecules with therapeutic effects • Academic clinical trials and clinical research • Innovative scientific-research base for the digitalization of healthcare • Research focused on ICT, AI in healthcare and telemedicine
Examples of main measures	<ul style="list-style-type: none"> • Cooperation with the Council for Research, Development and Innovation to create a new concept of healthcare research • Implementation of the targeted support programme • Implementation of the Evaluation Methodology of Targeted Support Organizations and Programmes for Research, Development and Innovation (Methodology 17+) • Setting up an institutional support system that takes sufficient account of the evaluation of organizations according to Methodology 17+, the transfer of funds from national sustainability programmes and current research needs (e.g. the involvement of young scientists) • Involvement of care users in the preparation and implementation of solutions in the field of the involvement of science and research in the solution of priority tasks in healthcare
Duration of implementation	2022–2030
Guarantor	MoH
Processor	Department of the MoH:NH
Cooperating institutions	Agency for Health Research, Office of the Government of the Czech Republic (Council for Research, Development and Innovation), MEYS, health insurance companies, NCISA, Union of Towns and Municipalities of the Czech Republic, medical faculties, large research infrastructures ²¹ operating in the health sector
Link to other specific objectives	1.2 Disease prevention, health promotion and protection; increasing health literacy

	2.3 Digitalization of healthcare
Indicators	<p>At impact level:</p> <ul style="list-style-type: none"> • Number of research support programmes created • Publication results – five-year period: professional articles • Publication results – five-year period: citation response <p>At the level of results/outputs:</p> <ul style="list-style-type: none"> • Number of publications in impact journals • Number of allocated grants (ratio of implemented projects to the number of submitted applications) • Number of successfully completed grants • Number of networks created/mapped by research organizations and enterprises • Number of results applied in clinical guidelines in the Czech Republic
Initial status	<p>Currently, the Ministry of Health supports medical research and development through two tools – targeted support (Applied Health Research Support Programme 2015-2022, or the Applied Health Research Support Programme 2020-2026) and institutional support for the long-term conceptual development of research organizations.</p> <p>Targeted support for the years 2015-2022, but also for the years 2020-2026, is based on the Concept of Healthcare Research until 2022, a document from 2013 which is already outdated in some areas.</p> <p>In the case of institutional support, a new methodology for evaluating research organizations and targeted support programmes for research, development and innovation, the so-called Methodology 17+, has been implemented since 2017. In this context, there is a gradual change in the approach to the distribution of institutional support and the subsequent evaluation of its results.</p> <p>At the same time, work is underway on the preparation of a new concept of medical research.</p>
Target Status	A new concept of medical research is created, the objectives of which are continuously met by projects of the targeted support

	<p>programme. The tender dossiers of the targeted support programmes are updated and respond to current needs. If necessary, the Applied Health Research Support Programme 2020-2026 is also updated.</p> <p>Methodology 17+ is fully implemented in the healthcare sector.</p>
Sources of funding	<p>State budget, EU funds, targeted support according to Act No. 130/2002 Coll. (Programme for the Support of Applied Medical Research), institutional support for long-term conceptual research development according to Act No. 130/2002 Coll.</p>

4. Implementation of the Health 2030 Strategic Framework

The Health 2030 Strategic Framework is an essential prerequisite for the long-term development of the public healthcare system and for strategic management processes in the whole department and its individual sectors. This is a live and open document, which means that it will respond appropriately to changes in conditions. The approval of this strategic framework sets out general directions for the future development of the healthcare department.

The Health 2030 Strategic Framework is implemented through seven Implementation Plans developed and subdivided according to the seven specific objectives of the Health 2030 Strategic Framework. These Implementation Plans set out in more detail the corresponding budgetary frameworks, quantify costs and anticipated savings and contain a more detailed description of the measures and activities through which the objectives are to be implemented. An implementation schedule will form part of each Implementation Plan.

The guarantor of the implementation of the Health 2030 Strategic Framework is the MoH. Given the interconnection of the public health insurance system with issues falling under the remit of other ministries, cooperation with a number of other government departments will be a necessary condition for the successful implementation of the Health 2030 Strategic Framework, especially with the MLSA, the MRD, the MoF and others.

4.1. Monitoring, evaluation

The implementation must also include the process of monitoring and evaluating the Health 2030 Strategic Framework. These processes will be largely simultaneous or continuous. The result should be a Health 2030 Strategic Framework which responds to changes in the external environment and knowledge from its application and accordingly takes individual measures. Developments and responses to new knowledge or identified needs may lead to change measures that may result in the need to update sub-objectives or measures and activities leading to their implementation. The Health 2030 Strategic Framework is a living strategic document that responds to contextual changes and developments in priority areas.

The revision of the strategic document will be carried out as necessary on the basis of regular evaluation, but no later than in the middle of the implementation, i.e. in 2025, and then in 2031 a final evaluation of the implementation of the entire document will take place.

The monitoring system is designed so that every two years a report on the progress of the implementation of the Health 2030 Strategic Framework will be submitted to the Government of the Czech Republic for evaluation. Evaluations of the implementation process of the Implementation Plans themselves will be submitted each year for information purposes to the management of the Ministry of Health. The direction of the development will be monitored, sources of data on selected areas will be provided, and their monitoring and evaluation system will be set up. Of course, this also requires ensuring sufficient professional and personnel capacities.

4.2. Indicators and key preconditions for implementation

The following basic indicators are defined at the level of the Health 2030 Strategic Framework. The last column of the table below refers to whether the indicator is also monitored in the Czech Republic 2030 Strategic Framework. The indicator table thus demonstrates the interconnection of both strategic documents: the umbrella document and the departmental document (which further elaborates the objectives and indicators).

Indicator	Detailed definition and unit	Initial value (2017)	Target Status (2030)	Monitored in the CZ 3030 Strategic Framework
Healthy life expectancy at birth	Years	62.7 (men) 64.0 (women)	65.7 (men) 66.0 (women)	YES
Premature (preventable) deaths ¹	Early mortality rate per 100 000 inhabitants	256.8	228.9	NO

Long-term limitation of activities – GALI (Global Activity Limitation Indicator)	<p>Disability rate in the age group 25–64</p> <ul style="list-style-type: none"> - Lowest income quintile - Highest income quintile <p>Disability rate in the age group 65+</p> <ul style="list-style-type: none"> - Lowest income quintile - Highest income quintile 	<p>25–64 lowest quintile: 23.2%</p> <p>25–64 highest quintile: 12.0%</p> <p>65+ lowest quintile: 53.5%</p> <p>65+ highest quintile: 35.9%</p>	<p>25–64 lowest quintile: 19%</p> <p>25–64 highest quintile: 10%</p> <p>65+ lowest quintile: 43%</p> <p>65+ highest quintile: 29%</p>	YES
Malignant tumor mortality ²	Deaths per 100 000 inhabitants	258	240	NO
Average age of general practitioners	Age	56	50	YES (monitored age structure)
The ratio of outpatient specialist visits to GP visits	Average number of visits per patient to an outpatient specialist: average number of visits per patient	7.4 : 3.1	6.5 : 3.6	NO
Public expenditure on prevention ³	Share of public expenditure on prevention in the total public health expenditure	2.7%	4.5%	YES
Preventive examinations with a GP	Percentage of inhabitants who underwent a preventive examination with a GP in the previous two years	63.2%	74.1%	NO
Proportion of persons with risky alcohol consumption	Percentage of persons consuming 6 or more alcoholic beverages on one occasion at least	14.9%	7.5%	YES

	once a month			
Share of daily smokers	Proportion of daily smokers over 15	21.5%	15%	YES
Population covered by a screening program	FOBT coverage, two-year interval, age range 55-69 years	0%	40%	NO
Number of beds in long-term and aftercare	Number of beds in long-term care per 1000 inhabitants	2.7	3.3	NO
Number of patients treated at home	Number of patients treated at home per 1,000 inhabitants	13.6	19.6	NO
Number of physicians/healthcare workers – (nurses, non-physicians, etc.) per 1000 inhabitants/self-governing unit ⁴	Number of healthcare workers (including nurses) per 1000 inhabitants	29	32	NO
Number of eHealth portal solutions created (electronic medical records) ⁶	Number	0	1	NO
Share of flawlessly classified hospitalization cases according to the CZ DRG model, accepted by health insurers for reimbursement	Percent	0	90	NO
Number of datasets/data models ⁷	Number	0	5	NO
Number of models optimizing care reimbursement ⁷	Number	1	4	NO
Number of research support programmes created	Number	1	3	NO
Publication results in a five-year period: professional articles ⁸	Number	17 056	22 000	NO
Publication results in a five-year period: citation response ⁹	Number	90 000	170 000	NO

¹ Definition according to EUROSTAT methodologies, the numerical setting corresponds to current trends and internationally published data.

² Calculated for all cancer diagnoses, the numerical setting corresponds to trends from the National Cancer Registry data.

³ Numerical settings made according to available OECD international comparisons, to a target level corresponding to advanced Nordic countries of Europe or the UK.

⁴ Pharmacists are not included among healthcare professionals.

⁵ The indicator is calculated as available capacity in full-time equivalent nursing jobs per 1000 inhabitants, calculating the target value with a 10% increase.

⁶ Only one NHIP guaranteed portal is planned within the department, which will cover all of the information sources of the department.

⁷ The default value of the indicator is the CZ-DRG system version 1.0 (2019), the target values are the CZ-DRG system in more advanced versions, as well as models optimizing reimbursement in outpatient care and long-term care/aftercare.

⁸ The numerical setting of the indicator is based on the statistics of publication outputs of domestic grant agencies (Czech Science Foundation, Technology Agency of the Czech Republic, Agency for Healthcare Research), generally for the "medical sciences" category.

⁹ Calculated as the median citation rate over a five-year period.

More detailed indicative indicators for monitoring the fulfillment of specific objectives will be monitored and evaluated within the implementation of the sub-objectives. For some measures it is not possible to determine the exact numerical value of success. Nonetheless, even the steps leading to the implementation of such "non-measurable" measures will be continuously monitored and evaluated.

Key prerequisites for successful implementation of the Health 2030 Strategic Framework

- Sufficient qualified and motivated staff involved in the implementation of the Health 2030 Strategic Framework.
- Involvement of all stakeholders in the development of individual sub-objectives and implementation of measures and activities of the Health 2030 Strategic Framework.
- Effective cooperation with other concerned ministries.
- Political stability enabling smooth legislative processes.
- Coherence between the implementation of individual measures, when the timescale of implementation of one measure will not prevent the implementation of another measure.
- Proper coordination of the deployment of individual instruments. The objectives and measures to implement them can be closely linked and the incorrect order of their implementation could have a negative impact on their benefits, and may require additional financial costs.
- Sufficient funds.
- Personnel stability of the Ministry of Health ensuring also the stability and continuity of the programme priorities.

- The key assumptions also correspond to the key risks that may jeopardize the successful implementation of the Health 2030 Strategic Framework. The assumptions and risks will be elaborated in more detail in the individual Implementation Plans.

5. Conclusion

The health status of the population has a significant economic impact on the national economy. This fact is not yet sufficiently taken into account by both politicians and economists and is not widely publicly understood. It can be stated without exaggeration that diseases undermine the national economy and that an 'investment in health' has an immediate impact on other economic sectors and the prosperity of society.

From a macroeconomic point of view, interventions in selected areas will lead to the achievement of basic preconditions for development – i.e. ensuring a healthy workforce. At the same time, in terms of social aspects, interventions will lead to a reduction in social disparities and to greater social cohesion. From the point of view of territorial cohesion, healthcare services represent one of the basic public services in the territory; cohesion is a necessary condition of regional development, especially in peripheral areas.

The low socio-economic status of the population can be an obstacle in the access to quality healthcare. Despite universal access to healthcare guaranteed in the Czech Republic, people from the most disadvantaged social groups may have less access to healthcare services.

Healthcare needs to respond to megatrends such as demographic aging, increasing technological changes, increasing social inequality, increasing mobility, the shift of civilization towards a knowledge-based economy, increasing technology availability and competencies for the future. Similarly, the need for health systems to respond flexibly and effectively to new threats to public health, such as the COVID 19 pandemic, has become apparent.

Understanding the factors affecting the public healthcare system in any way is important for developing targeted policy-driven solutions. The Health 2030 Strategic Framework, prepared by the Ministry of Health, provides a clearly-structured overview of the issue of Czech healthcare in its entirety, while also aiming to contribute to the better coordination of individual steps, their better planning in terms of time and subject matter, and their interdependence.

The basis for the successful development of the healthcare sector is the vision formulated in the Health 2030 Strategic Framework. As it is a long-term document, the conditions under which the Health 2030 Strategic Framework will be implemented may change over time. The change of environment and conditions will always be responded to in accordance with the conditions set out in the Minister's order to implement the Health 2030 Strategic Framework.

The Health 2030 Strategic Framework will be implemented and fulfilled under conditions of non-discrimination, equal opportunities, and other principles under Czech and EU law with the aim of creating effective public administration.

Finally, the motto is: Health is a social value that translates into all actions, into all policies. Every Czech citizen is aware that health is not created in hospitals and doctors' offices. It is

created at home, in schools and at workplaces. Wherever people are born, raised, educated, work, do sports, relax and age.

6. Abbreviations

00-F99	Mental and behavioural disorders – diagnoses
CMA JEP	Czech Medical Society of Jan Evangelista Purkyně
CSO	Czech Statistical Office
DCCI	Deyo’s adaptation of the Charlson Comorbidity Index
DM	<i>Diabetes mellitus</i>
DRG	Diagnosis-related group classification system
ERDF	European Regional Development Fund
eHealth	Use of information and communication technologies in healthcare
EHES	European Health Examination Survey
EHIS	European Health Interview Survey
ESF	European Social Fund
ESF+	European Social Fund in the programme period 2021-2027
EU	European Union
EU28	28 EU Member States (including the UK)
Eurostat	Statistical Office of the EU
CF	Cohesion Fund
GDP	Gross domestic product
HTA	Health Technology Assessment
COPD	Chronic obstructive pulmonary disease
ICT	Information and Communications Technology
IPME	Institute for Postgraduate Medical Education of the Czech Republic
L1-L3	Physicians work category
EMS	Emergency Medical Service
MoT	Ministry of Transport of the Czech Republic
MDGs	Millennium Development Goals
mHealth	Mobile Health
MRD	Ministry of Regional Development of the Czech Republic
MIT	Ministry of Industry and Trade of the Czech Republic
MoJ	Ministry of Justice of the Czech Republic
MEYS	Ministry of Education, Youth and Sports
MoI	Ministry of the Interior of the Czech Republic
MoH	Ministry of Health
MoA	Ministry of Agriculture of the Czech Republic
MFA	Ministry of Foreign Affairs of the Czech Republic
MoE	Ministry of the Environment
NMHAP	National Mental Health Action Plan
NCN NMH	National Centre of Nursing and Non-medical Healthcare Fields
NO	Department of the Ministry of Health for Economics and Health Insurance
NRHP	National Register of Health Professionals
NSEH	National eHealth Strategy
NH	Department of the Ministry of Health for Healthcare
NHIS	National Health Information System
OECD	Organization for Economic Co-operation and Development
UN	United Nations
GPCA	General practitioner for children and youth

SDGs	Sustainable Development Goals
SIDC	State Institute for Drug Control
NIPH	National Institute of Public Health
OG	Office of the Government of the Czech Republic
IHIS	Institute of Health Information and Statistics of the Czech Republic
GP	General practitioner
WHO	World Health Organization
MT	Malignant tumors