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Financing Healthy Living in the Czech Republic

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Due to the wider availability of advanced healthcare technologies and services, many westernized countries are experiencing improved health outcomes. Following the fall of the communist regime in 1989, the Czech Republic has transitioned into the arena of westernized medicine. Two sets of issues have arisen during the transition. The healthcare system in the Czech Republic is characterized by extensive utilization of healthcare goods and services but, counter-intuitively, does so with an insignificant impact on health outcomes, such as life expectancy, mortality as a result of cardiovascular disease, and incidence of cancer. The Czech Republic operates under a nationalized healthcare system, where citizens enjoy almost universal free coverage of health-related expenses. The long-term financial sustainability of this system is brought into question when considering the extent of consumption of healthcare goods and services by the general population and the increasing average age of citizens in the Czech Republic. If

the current high levels of utilization continue in the future, it is unclear if the healthcare system and the national government will be able to support the increasing numbers of economically inactive citizens.

This article argues that an increased emphasis on preventative care, public health, and improvement of lifestyle factors, such as reduced tobacco consumption, would help decrease pressures on the healthcare system's financial infrastructure and lead to long-term improved health outcomes throughout the Czech Republic. Currently, 2.1 percent of the Czech Republic's total expenditure on healthcare is allocated to prevention and public health (Eurostat, 2012). Allocating a larger percentage of funds toward the development of disease prevention and public health programs could decrease the burden of long-term chronic illness treatment that is financially taxing on a healthcare system. In addition, these programs could work to remedy some of the negative health outcomes currently facing

the nation and thereby improve overall health in the Czech Republic.

Historical Background

Modern healthcare in the Czech Republic was born out of a rigid centralized system implemented under the Soviet Union. This system, termed the Semashko model, was completely state owned and controlled and was defined by universal access to healthcare throughout the country. Government mandates controlled all aspects of healthcare: delivery of service, infrastructure, and employment of workers. Therefore, it was often tainted by political motivations instead of patient needs. Even though the system was fraught with political undertones, the Semashko model was highly effective in delivering healthcare services to fit the needs of the nation. Citizens throughout the country were able to access healthcare facilities and receive care from a physician at both hospitals and clinics at no direct charge to the patient. Under the Semashko model, infant mortality rates and rates of tuberculosis infection decreased. As time progressed, however, it became more and more evident that there was a growing need for a more flexible system that could adapt to the changing needs of the country. The rigid Semashko model was unable to adapt to health problems created by changes in lifestyle factors and environmental conditions (Kinkorová and Topolčan, p. 3).

Establishment of the Modern System

Following the split of Czechoslovakia into the Czech Republic and Slovakia on January 1, 1993, the newly born Czech nation developed its own system of healthcare, transitioning to an insurance-based model of healthcare. While there is certainly evidence of the Semashko model in the modern system (e.g., universal healthcare coverage), there has been a transition to increased patient autonomy. Under the modern healthcare system, economically active citizens, comprising approximately 42 percent of the population, make an obligatory contribution to the Social Health Insurance Fund at a rate of 4.5 percent of their annual income. Economically active citizens are

defined as all persons who furnish labor supply for the production of economic goods and services (OECD, 2002). This flat tax rate has no cap. Employers also make contributions of 9 percent of all of their employees' gross salaries (CzechInvest). Economically inactive citizens, comprising the remaining 58 percent of the population, include the unemployed, incarcerated individuals, students, men and women on parental leave, individuals serving in the military, individuals seeking asylum, and those receiving social security benefits (i.e., the elderly). For economically inactive citizens, the government makes contributions to the Social Health Insurance Fund on their behalf (Alexa et al., p. 15). The revenue for state contributions to the Social Health Insurance Fund comes from general national taxation funds. All individuals have the ability to choose from among a number of nationalized health insurance companies for coverage. Because insurance companies are public, they are prohibited from denying anyone coverage, which guarantees health coverage to all individuals throughout the country, regardless of their employment status. Currently, there are seven health insurance funds in the Czech Republic, the largest being Všeobecná Zdravotní Pojišťovna, or the General Health Insurance Company, which covers approximately 60 percent of the population. All the insurance funds offer the same baseline level of coverage and differ only slightly in terms of special coverage options. For example, all personnel serving in the Czech military are covered under the same health insurance fund.

Overview of Comparison Nations

Comparative data from selected nations within the Organisation of Economic Co-operation and Development (OECD) provide perspective on the Czech healthcare system. Although the OECD is comprised of 34 democratic states with market economies as well as 70 supporting states, the summary data are based on only the current 34 member states, with individualized data from six regional comparator nations including the Czech Republic. Comparator nations include Austria, Czech Republic, Germany, Poland, Slovakia, and Slovenia. These nations are

Table 1
Healthcare Expenditure as a Percentage of 2015 Total Gross Domestic Product

Country	Percentage of GDP Expended on Healthcare
Austria	10.1
Czech Republic	7.1
Germany	11.0
Poland	6.4
Slovakia	7.6
Slovenia	8.7
Cohort average	8.5
OECD average	8.9

Source: OECD (b). 2013.

examined for several indicators of quality of healthcare, healthcare outcomes, and usage of care. In this article, comparator nations were chosen on the basis of their geographic proximity to the Czech Republic, in addition to similarities in their healthcare system model. In order to gain a well-rounded comparison to Czech figures, OECD averages and the average of the comparator nations also are considered.

As seen in Table 1, comparator nations spend roughly between 6.4 percent (Poland) and 11 percent (Germany) of GDP on healthcare. The Czech Republic falls toward the lower end of the range, spending 7.1 percent on healthcare, which is significantly below the OECD average of 8.9 percent.

In addition to considering the percentage of GDP allocated to financing total healthcare expenditures, it is important to consider how those funds are distributed across major areas of healthcare spending. There is a trend among many westernized countries to expend significant amounts of funding on complicated end-of-life procedures that oftentimes provide little additional life expectancy benefit and that only marginally improve quality of life. In the case of the Czech Republic, it is especially important to look at spending on prevention and public health services. For all comparator countries, only a small percentage of total healthcare spending is designated for prevention and public health.

Currently in the Czech Republic, the primary provider and overseer of public health is the National Institute of Public Health, Státní Zdravotní Ústav (SZU), which is supplemented by 14 regional public health authorities. SZU provides epidemiological surveillance, conducts research, and monitors environmental health factors as well as the implementation of European Union (EU) regulations and standards. A major role of the SZU is the provision of preventative care covered under the social health insurance fund. Preventative services provided include nationwide compulsory vaccination programs for children as well as physical examinations with a pediatrician; biannual examinations with a general practitioner and compulsory vaccinations for adults; cancer screening programs for colorectal, breast, and cervical cancers; biannual mammographies for women aged 45 to 69; gynecological examinations of women beginning at age 15; and population-wide vaccinations against a wide range of diseases, including diphtheria, cervical cancer, hepatitis B, *Haemophilus influenzae* type B, measles, mumps, rubella, pertussis, poliomyelitis, tetanus, and tuberculosis (Kinkorová and Topolčan, p. 6). While these

services are invaluable in terms of identifying and preventing many diseases, the system currently in place does little to tackle the social determinants of health which are currently playing a significant role in determining the health outcomes of the Czech Republic (Kinkorová and Topolčan, p. 6).

Preventative medicine is a specialty practice of medicine that focuses on enhancing individual and community health with the goal of preventing disease, disability, and death. This proactive approach to medicine hopes to prevent disease rather than retroactively treat advanced conditions. Given the current status of healthcare in the Czech Republic, an emphasis on preventative medicine could have an impact by addressing lifestyle maladies, such as excessive consumption of tobacco and alcohol and the increased incidence rate of obesity, as well as having long-term effects on aging populations, thereby decreasing the burden on healthcare infrastructure. Some characteristics of preventative medicine include the focus on educational programs targeted at specific areas of community health and an emphasis on individual patient care. An emphasis on individual patient care is especially important because it targets each patient's specific conditions to broadly improve the patient's overall health. This could mean managing hypertension and high cholesterol with medication in addition to lifestyle alterations such as avoiding foods with high sodium content.

As seen in Table 2, preventative healthcare measures account for only 1.8 percent (Austria) to 4.0 percent (Slovenia) of total healthcare expenditure, with the Czech Republic again falling toward the lower end of the range with 2.1 percent. This is less than the comparator nation average of 2.7 percent. Data for Table 2 come from Eurostat: Statistics Explained; therefore, an OECD average is not considered for this table. Both Tables 1 and 2 indicate that financial expenditures on healthcare, and specifically financial resources available for prevention and public health in the Czech Republic, are limited. Changes in the allocation of financial resources have the potential to have a significant impact on health outcomes in the Czech Republic.

Access to Care

Two indicators of the availability of and the timely access to healthcare resources are the number of practicing physicians throughout the nation and the number of available hospital beds. Especially in nationalized healthcare systems, a shortage of physicians often means long wait times to receive care; and a shortage of hospital beds means difficulty treating patients in a timely manner. This is not an issue in the Czech Republic, although regional disparities in physician density do exist. For example, the city of Prague has the highest number of practicing physicians, which correlates with it having the highest population density in the Czech Republic. Nonetheless, due to deliberate actions by insurance funds and the government, there is good access to medical care throughout the nation, even in the most rural areas.

As seen in Figure 1, the Czech Republic has 3.67 physicians per thousand people in the population, greater than both the OECD average of 3.1 physicians per thousand people and the cohort average of 3.2 physicians per thousand people. Figure 2 shows the number of hospital beds available per thousand people. In the Czech Republic, hospital beds refer to all available beds in a hospital including those for newborn babies. This latter category is not included in all OECD countries' data; nevertheless, this is a relatively small percentage that does not affect the overall results dramatically. In both Figures 1 and 2, the Czech Republic has values above the OECD and cohort averages, which indicate that negative health outcomes are likely not attributable to lack of access to quality medical care.

## Overall Consumption of Healthcare Goods and Services

Overconsumption of healthcare services and products (physician consultations, pharmaceuticals, etc.) has been a defining characteristic of the Czech healthcare system. Given its status as a nationalized health system, there is no limitation to the number of visits an individual can have; and with the exception of elective procedures, all visits are covered

Table 2

Healthcare Expenditure by Function (As Percent of Total Health Expenditure), 2012

Comparator Country	Services of Curative and Rehabilitative Care	Services of Long-Term Nursing Care	Ancillary Services to Healthcare	Medical Goods Dispensed to Outpatients	Prevention and Public Health Services	Health Administration and Health Insurance	Not Specified
Austria	60.2	14.5	3.2	16.5	1.8	3.8	N/A
Czech Republic	60.1	3.9	5.7	24.5	2.1	3.0	0.6
Germany	54.5	12.6	4.8	19.4	3.3	5.4	N/A
Poland	60.1	7.0	5.1	24.6	2.0	1.2	N/A
Slovakia	46.9	0.3	8.5	38.0	2.8	3.5	N/A
Slovenia	56.5	8.9	3.4	23.8	4.0	3.5	N/A
Cohort average	56.4	7.9	5.1	24.5	2.7	3.4	N/A

Source: Eurostat: Statistics Explained.

Figure 1

Physician Density per 1,000 People, 2013
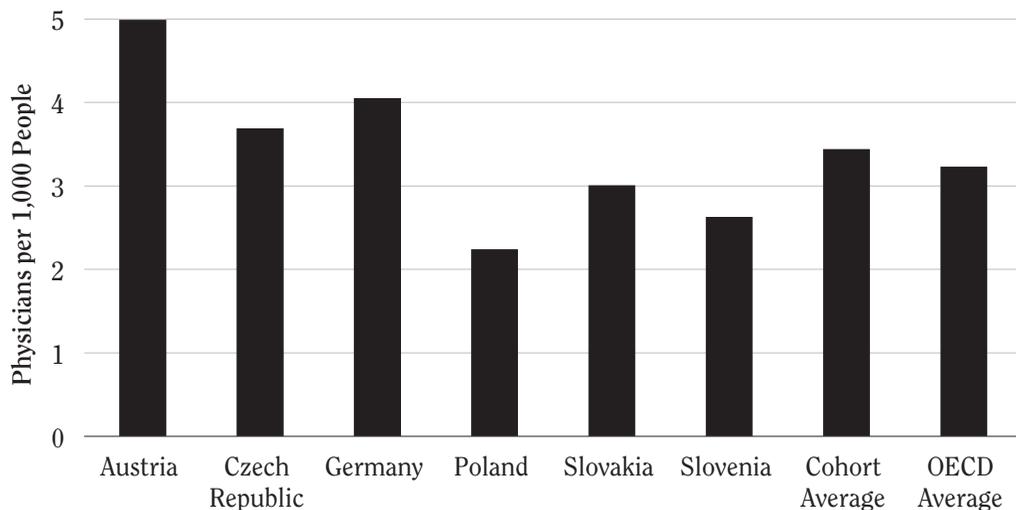
Source: OECD. 2013.

Note: Data for Slovakia were taken from the 2007 database due to the lack of availability of more current data.

by the national health insurance companies. This has led to a significant consumption of healthcare services and related goods (e.g., pharmaceuticals and home care equipment) in the Czech Republic. According to the OECD, in 2013 the average Czech had 11.1 consultations with a physician (see Figure 3) and 2.4 outpatient hospital consultations.[1] These are compared to the OECD averages of 7.81 and 1.8, respectively.

In 2008, a user fee system was implemented as a mechanism to decrease the consumption of healthcare goods and services (van Ginneken et al., p. 2). Although there was a slight decrease in consumption after the implementation of user fees from the 2006 number of 15.0 visits per capita, the per capita average consumption is still far above OECD averages. Large numbers of physician consultations can lead to stress on healthcare infrastructure as well as a breakdown in efficiency.

User fees were initially set at what were deemed moderate rates: Czech koruny (CZK) 30 (€1.20) per physician consultation, CZK 60 (€2.40) per day of stay in a hospital, CZK 30 (€1.20) for prescribed pharmaceuticals, and CZK 90 (€3.60) for ambulatory care (van Ginneken et al., p. 2). It is necessary to note that individuals belonging to vulnerable populations, such as neonates, chronically ill children, pregnant women, those living below the poverty line, those with diagnosed infectious diseases, and those receiving preventative care, were exempt from participation in the user fee system. The implementation of user fees has proved an extremely controversial topic in the Czech Republic. Following political unrest in 2009, it was decided that fees would be reduced for the young and for the elderly. One of the largest concerns regarding the implementation of user fees is the financial and administrative pressure it puts on regional authorities responsible for reimbursements. The decision to implement a user fee system has also created political divisions. Ultimately, due to a lack of political consensus on the efficacy of the user fee system, control over

the implementation of the user fee system fell on regional health authorities. Furthermore, inconsistent implementation of the user fee system has led to individuals seeking medical care traveling to certain regions of the Czech Republic in which the user fee system is not currently in place. There has been concern that the regional implementation differences will have an impact on the equity in access to care, although there has been no evidence of this thus far. To decrease financial and administrative stress on regional health authorities and hospitals, the user fee system must be implemented consistently throughout the country or not at all. Additionally, there may be strategies available, such as increased spending on prevention and public health, that would decrease the number of annual physician consultations per capita without causing the level of political controversy observed under the implementation of the user fee system.

In addition to extensive consumption of physician consultations, the Czech Republic has a high consumption of prescription pharmaceuticals compared to most other OECD nations. The immediate cause of high consumption is currently unclear, although it has been speculated that patients may lack confidence in their physicians and therefore simply request prescriptions as a solution to their illness. Or it could be that physicians are not confident in themselves and are therefore concerned about the possibility of lawsuits and are quick to prescribe pharmaceuticals as a more simplistic treatment of an illness. Zeno Veselik, Executive Director of ABC Works, suggests that physicians may be more apt to prescribe pharmaceutical products when they are receiving some financial benefit from pharmaceutical companies. In addition to over-prescribing, it was estimated in 2006 that from CZK 4 billion to CZK 10 billion worth of drugs prescribed went unused (van Ginneken et al., p. 2). Although the reasons for this behavior are unknown, it is clear that unused pharmaceuticals prove to be a financially stressing aspect of the Czech healthcare system. Whatever the reasons, according to the OECD, 21.1 percent of total health expenditure in the Czech Republic was spent on pharmaceuticals in 2012. In order to maintain the financial
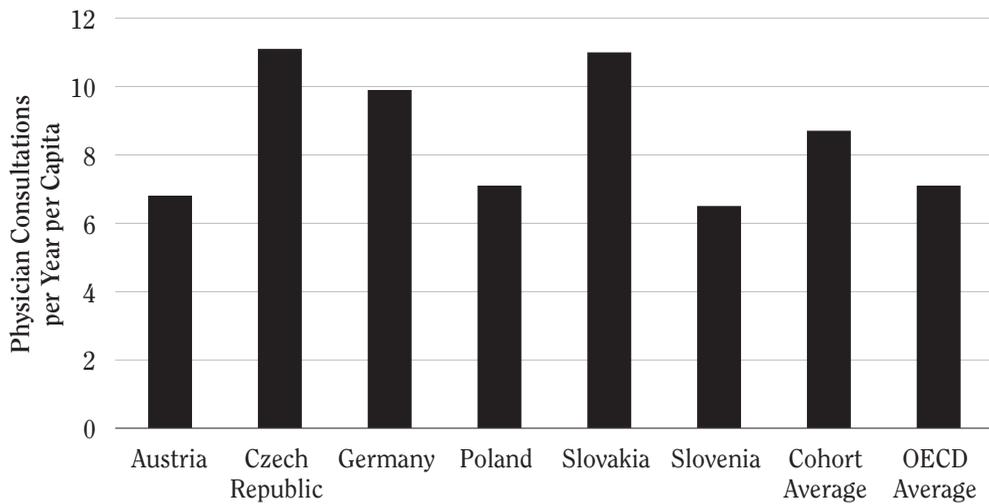
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[1]Figures for outpatient hospital consultations are not included due to a lack of available data for all cohort nations.

Figure 2
Number of Hospital Beds per 1,000 People, 2012
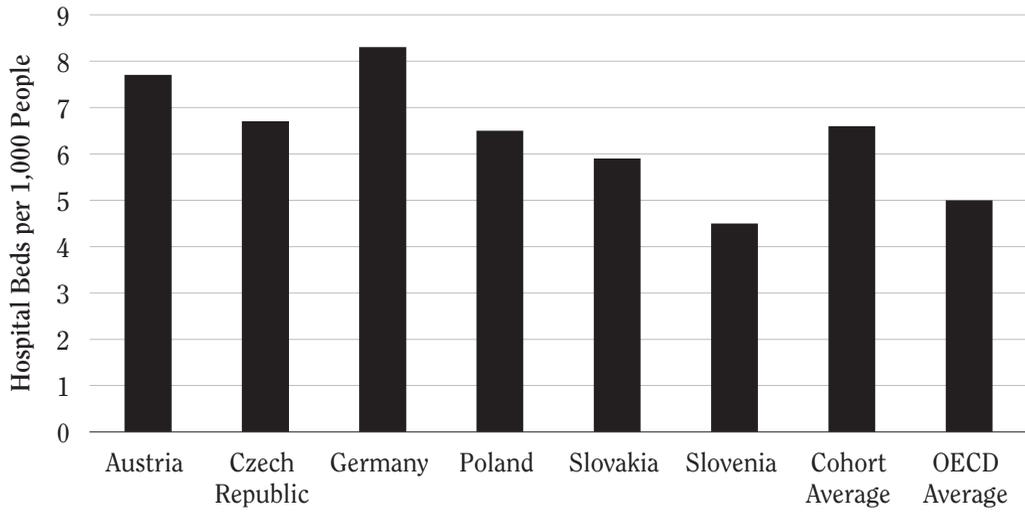
Source: OECD. 2012.

Figure 3
Annual Physician Consultations per Capita, 2013

Source: OECD (a). 2013.

stability and efficiency of the Czech health system, serious consideration needs to be given to strategies to control consumption.

Measures of Overall Health in the Czech Republic

Life expectancy in the Czech Republic is 75.8 years for men and 82.0 years for women compared with OECD averages of 77.5 years and 82.5 years, respectively (Eurostat Core Public Health Data, 1989; Eurostat Core Public Health Data, 2014). This ranks the Czech Republic 28th of 34 OECD member countries in terms of life expectancy. There are numerous factors that can have an impact on life expectancy, the quality of and access to health systems being just one. Lifestyle factors, such as diet, alcohol consumption, smoking, environmental conditions, and national security, also can have an impact on life expectancies. In an OECD study, two health outcomes gave strong indications about the status of health in the Czech Republic. Of the 34 nations studied, the Czech Republic has the fourth highest mortality rate from cardiovascular disease and the seventh highest mortality rate from cancer (OECD, 2014). This raises the question of why Czechs, who are visiting a physician approximately once a month, appear to have shorter life expectancies and higher rates of morbidity from cardiovascular disease and cancer than what otherwise might be expected. Access to healthcare does not appear to be the cause of such negative health outcomes.

The top ten causes of death in the Czech Republic according to the World Health Organization are coronary heart disease (24.95 percent of all deaths); stroke (9.7 percent); trachea, bronchus, and lung cancers (5.7 percent); colon and rectal cancers (3.8 percent); lower respiratory infections (2.8 percent); chronic obstructive pulmonary disease (2.4 percent); diabetes mellitus (2.2 percent); hypertensive heart disease (2.1 percent), pancreatic cancer (2.1 percent); and cirrhosis of the liver (1.8 percent) (World Health Organization, 2012). According to the World Heart Federation, risk factors for coronary heart disease are tobacco use, diets high in saturated fats, obesity, and physical inactivity. Similarly, important risk factors for stroke are hypertension and tobacco consumption (World Heart Federation). The American Cancer Society cites smoking as the single highest risk factor for the development of lung cancer, in addition to several other conditions, such as lower respiratory infections and chronic obstructive pulmonary disease (American Cancer Society [b], 2016). Additionally, diets high in processed meats, cooking meat at very high heat, and obesity are listed as risk factors for colon and rectal cancer (American Cancer Society [a], 2016).

When looking at these top ten causes of death as determined by the World Health Organization, there appears to be a correlation between lifestyle risk factors and ultimate cause of death. In the Czech Republic, the factors playing the most significant role in the overall health of the nation are the non-medical determinants of health; these include tobacco consumption, alcohol consumption, nutrition (especially the consumption of processed meats), and body weight.

Tobacco consumption is internationally recognized as one of the highest contributors to negative health outcomes (World Health Organization, 2016). In addition to the highly addictive nature of ingredients such as nicotine, tobacco products contain what seems to be an endless list of chemicals. These chemicals include carcinogens, such as tar, formaldehyde, ammonia, arsenic, and dichlorodiphenyltrichloroethane (DDT). Tobacco consumption is particularly high in the Czech Republic, where, as of 2013, 22.2 percent of the population over the age of 15 were daily smokers (OECD [b], 2014). With approximately one-fifth of the population being daily smokers, the impacts to their health, as well as the impacts of secondhand smoke to others, are significant. While walking through the streets of Prague or sitting at a restaurant, one can expect to be surrounded by a cloud of smoke. Currently there does not appear to be any social stigma associated with smoking in the Czech Republic.

In June 2012, the Czech Republic ratified the World Health Organization Framework Convention on Tobacco Control, designed with the intention of combating the tobacco consumption epidemic occurring worldwide.

This document outlines signatory nations' commitments to prioritize the maintenance of high standards of public health. It is intended to tackle the environmental, social, and health-related impacts of exposure to tobacco smoke, whether firsthand or secondhand. In addition to the Czech Republic ratifying this treaty, there are bans in place throughout the country on tobacco advertising and bans on promotion on television and on radio broadcasts. Hope for future reductions in the consumption of tobacco occurred in June 2015 when a bill that bans smoking in all restaurants passed the legislature. This major step is one in the direction of decreasing the effects of smoking and secondhand smoke in public areas. It is clear that action is being taken by the Czech government to decrease tobacco consumption nationally. However, given the lack of evidence of any decrease in overall tobacco consumption levels, broader steps may be necessary to influence the consumption of tobacco products. These may include prohibiting smoke in all indoor public areas, stricter restrictions on the sale of tobacco products to minors, and greater emphasis on public health campaigns on the health risks of tobacco consumption.

Impacts of an Aging Population

As with many westernized countries, the Czech Republic is experiencing an aging population. In 2015 the average age of a Czech person was 41.5 years and is projected to increase to 43.4 years by the year 2020 (United Nations, 2015). In addition, according to OECD demographic statistics, 17.3 percent of the Czech population is over the age of 65; and, if current trends in population aging continue, this percentage will only continue to grow in the future. This current age structure can be attributed to decreasing rates of fertility, combined with increased longevity. This increased longevity can be attributed to better medical technology and increased availability of high-quality medical services. Since the Velvet Revolution in 1989, the average life expectancy for women has increased from 75.5 years to 82.0 years and for men from 68.2 years to 75.8 years (Eurostat Core Public Health Data, 1989; Eurostat Core Public Health Data, 2014).

The change in age structure of the population impacts many aspects of the Czech economy, including healthcare costs. A major consequence of an aging population is an increased number of economically inactive citizens, requiring financial support by economically active citizens. By the nature of the structure of the Czech health insurance plan, only individuals who are currently employed contribute to the national health insurance fund; all other individuals, including those who are retired, have their expenses covered by the national government. Therefore, with an aging population come more individuals retiring each year, and relatively fewer younger employees entering the work force. This translates into increased medical costs for the government, and increased consumption of healthcare services, accompanied by a dwindling economic base.

In addition to the increased financial burden on the healthcare infrastructure, lifestyle determinants of health such as tobacco consumption, alcohol consumption, and poor diet become more important in old age and can exacerbate previously existing medical conditions. Therefore, as the Czech population ages, it is becoming of even greater importance to address the population-wide lifestyle factors contributing to negative health outcomes throughout the country.

Conclusion

The healthcare system in the Czech Republic can currently be characterized by relatively low levels of expenditure in terms of percentage of national GDP. The Czech Republic expends 7.1 percent of its total GDP on healthcare (OECD [a], 2013). This sits below the OECD average of 8.9 percent. This expenditure, combined with exceptionally high rates of utilization of health care resources, such as physician consultations and hospital visits, along with an aging population, raises the question of the long-term financial stability of the current healthcare system in the Czech Republic. In addition to finances, it is necessary to look critically at the negative health outcomes facing the nation. High mortality rates from cardiovascular disease and cancer suggest that change is needed within

the healthcare system to reduce burdens on infrastructure and healthcare personnel treating these conditions.

To resolve this mix of health outcomes and financial burden issues, this article suggests a multipronged effort. First, increasing healthcare expenditure as a percentage of total GDP will make more healthcare resources available to support the growing number of individuals whose healthcare costs are covered by the Czech government. Ideally, this level should at least match the OECD average of 8.9 percent of total GDP. Increasing the relative percentage allocations for prevention and public health services will better address lifestyle factors contributing to the high mortality rates. By controlling tobacco consumption, obesity, and alcohol consumption, the Czech Republic will be able to improve its health outcomes over time. In addition, targeting improvements in lifestyle factors, such as diet and exercise as well as a reduction in smoking,

which widely exacerbates health conditions as the population ages, will lead to more efficient use of healthcare resources. Another option for improving financial efficiency is to implement an upper limit on the number of free physician consultations annually that are covered by the social health insurance funds. Exceptions could be made for individuals with chronic health conditions requiring regular monitoring by a health care professional. Educational programs targeted at awareness of over-prescribing of drugs could benefit both physicians and patients, while at the same time reducing financial burdens. Also, just as restrictions on television advertising of tobacco products can decrease consumption, decreasing the number of pharmaceuticals commercials could have a similar effect. Taken together, this multipronged approach will both decrease the prevalence of negative health outcomes while simultaneously relieving the financial burden on the Czech healthcare system.

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