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Improving the Czech health care system

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Daniela Glocker**

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IMPROVING THE CZECH HEALTH CARE SYSTEM

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By Falilou Fall and Daniela Glocker

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ABSTRACT/RÉSUMÉ

Improving the Czech health care system

The Czech health care system is doing well in terms of health outcomes compared to other Central East European economies that inherited similar health systems after the transition and has been converging to OECD averages. However, benchmarking the Czech health system to countries with comparable institutional setting points to potential for efficiency gains. This paper assesses the performance and emerging key challenges of the Czech health system, and provides recommendations to adapt the system to remain effective and financially sustainable in the context of an ageing society. Further, the contribution of various disincentives in the system on the supply and the demand side of health care are discussed.

This Working Paper relates to the 2018 OECD Economic Survey of Czech Republic. (www.oecd.org/eco/surveys/economic-survey-czech-republic.htm).

JEL classification: I13; I15; I12; I18; I11

Keywords: Czech Republic, health care system, health policy, healthcare coordination, health disparities, ageing, hospital, primary healthcare, pharmaceutical expenditures, generics, prevention, health insurance, fee-for-services, health practitioners.

Améliorer le système de santé tchèque

Le système de santé tchèque affiche de bonnes performances par rapport aux autres économies d'Europe Centrale et de l'Est qui ont hérité de systèmes de santé similaires après la transition et qui ont convergé vers les moyennes de l'OCDE. Cependant, l'analyse comparative du système de santé tchèque par rapport aux pays ayant des arrangements institutionnels comparables montre qu'il y a potentiel important de gains d'efficience. Ce document évalue les performances et les principaux défis émergents du système de santé tchèque, et fournit des recommandations pour adapter le système afin de rester efficace et financièrement viable dans le contexte d'une société vieillissante. En outre, la contribution de divers facteurs désincitatifs du côté de l'offre et de la demande de soins de santé est discutée.

Ce Document de travail se rapporte à l'Étude économique de l'OCDE de République Tchèque 2018 (<http://www.oecd.org/fr/eco/etudes/etude-economique-republique-tcheque.htm>).

Classification JEL: I13; I15; I12; I18; I11

Mots clefs: République Tchèque, système de santé, politique de santé, coordination du système de santé, disparités de santé, vieillissement, hôpital, soins primaires de santé, dépenses pharmaceutiques, génériques, prévention, assurances médicales, tarification à l'acte, professions médicales.

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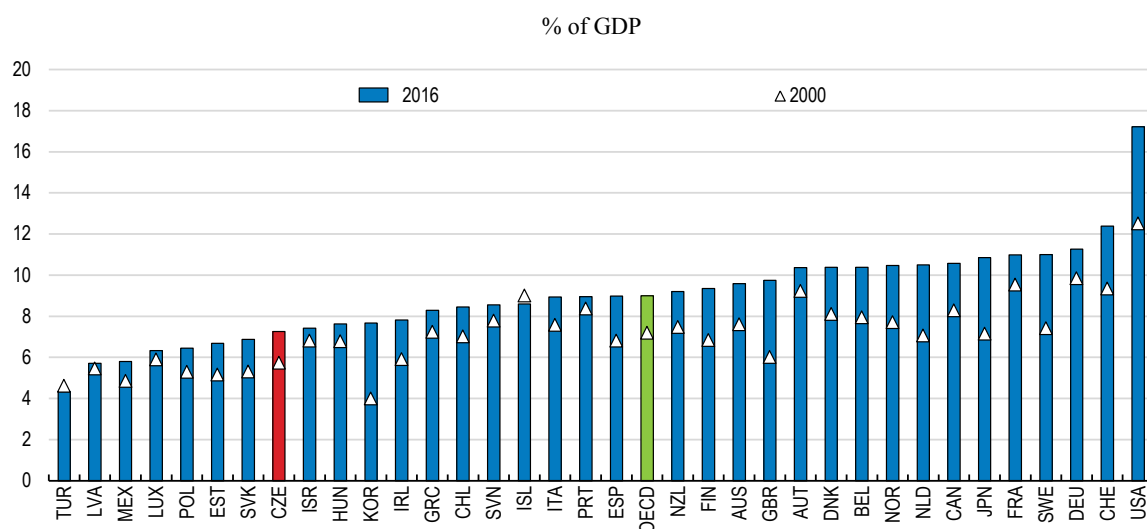
Improving the Czech health care system

By Falilou Fall and Daniela Glocker¹

Health contributes both to well-being and economic growth. The health status of the population is linked to economic performance through workforce participation and productivity. An efficient health care system that provides equal access and quality treatment of care also contribute to better well-being and makes society more inclusive (James, Devaux and Sassi, 2017^[1]). Health outcomes in turn are influenced by a set of determinants, ranging from access to and quality of care to living conditions and lifestyle choices of the population.

The Czech health care system performs well along several dimensions. Along with incomes, living conditions have converged towards the OECD average over the last two decades. Life expectancy rose by 2.6 years to 78.7 years between 2005 and 2015, just below the average of 80.6 years in the OECD (OECD, 2017^[2]). Spending on health care at 7.2% of GDP in 2016 is relatively low compared with OECD peers, although the health care system provides mandatory, universal coverage for all its residents (Figure 1).

Figure 1. Total health care expenditure is rising



Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris.
http://dx.doi.org/10.1787/health_glance-2017-en.

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The financial sustainability of the health care system is challenged by an ageing society as the dependency ratio deteriorates. The system is funded mainly through social security contributions levied primarily on wages and therefore the financial sustainability is vulnerable to both economic shocks and an ageing society. By 2040, every fourth person is projected to be 65 years or older compared with 18% of the population today. The demographic shift will result in lower revenues from wage-based contributions, while expenditures are likely to rise due to age-related health costs. It is therefore crucial to make the system more resilient and sustainable now when the economy is doing well. The reform should ensure the efficient use of available resources while maximising the health and well-being of the population.

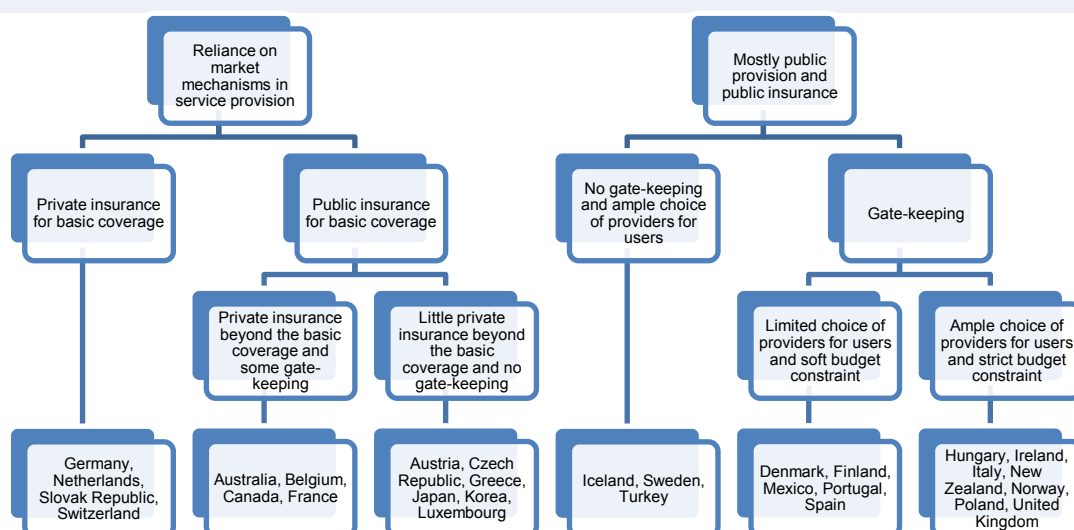
This paper assesses the performance and emerging key challenges of the Czech health care system, and provides recommendations to adapt the system to remain effective and financially sustainable with regard to ageing. The system is doing well in terms of health outcomes converging to the OECD average and performing well compared with other CEE economies that inherited similar health care systems after the transition. Benchmarking to countries with a comparable institutional setting (Box 1) however points to potential efficiency gains.

Box 1. Health care systems: A wide variety of frameworks and an OECD typology

In health care there is no single system that performs best and several types of system can function well, but policy settings, such as those affecting incentives, have to be coherent. Joumard et al. (2010^[3]) provide an empirical typology of health care systems in OECD countries. A cluster analysis on a dataset containing information on health institutions and policies suggest that six groups exist, that vary in the mechanisms regulating insurance markets and coverage, the choice of provider and the degree of private provision amongst other (see Figure 2).

The Czech Republic, together with Austria, Greece, Japan, Korea and Luxembourg are featuring public basic insurance coverage combined with some reliance on market mechanisms at the provider level. Extensive private provision of care gives users a wide choice among providers and there is no gate-keeping in place. As the available information on quality and prices is scarce, little competitive pressures on providers are created. Over-the-basic coverage is limited. The budget constraint tends to be less stringent than in other country groups.

Figure 2. OECD typology of health care systems



Note: Countries' institutional setting is based on the *Survey on Health System Characteristics* from 2009.
 Source: Joumard, I., C. André and C. Nicq (2010^[3]), "Health Care Systems: Efficiency and Institutions", OECD Economics Department Working Papers, No. 769, OECD Publishing, Paris.
<http://dx.doi.org/10.1787/5kmfp51f5f9t-en>

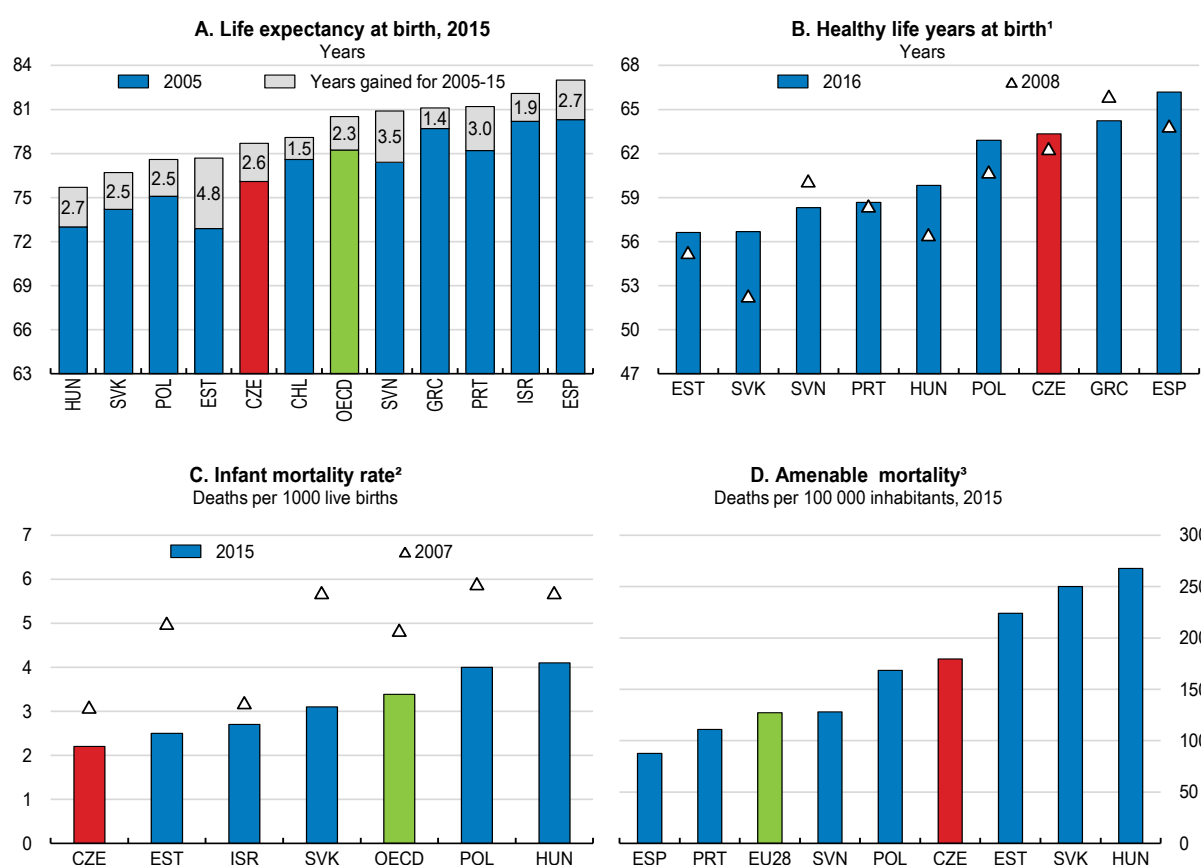
The paper also discusses how various disincentives in the system create inefficiencies on the supply and the demand side of health care.

Overview of health outcomes in the Czech Republic

The health status of the population is slowly converging to the OECD average

Although many health outcomes have improved significantly over the last decades, there is room for improvement. The infant mortality rate has decreased from 10.8 to only 2.5 infant deaths per 1 000 live births over the course of 25 years and is now among the lowest in the OECD (Figure 3, Panel C). Healthy life years, which indicate the share of remaining years free of disability, have also increased. Thus, better health care has not only led to men and women living longer but also to ageing healthier (see Figure 3, Panel B). While the Czech Republic outperforms several CEE economies with respect to health outcomes such as survival rates after admission to hospital for ischaemic strokes (OECD, 2018^[4]), and in amenable mortality, it is still lagging behind the OECD average (Figure 3, Panel D).

Figure 3. Health outcomes have improved on several dimensions



1. Weighted average of data by gender for the population less than one year.

2. Based on the minimum threshold of 22 weeks of gestation period (or 500 grams birthweight).

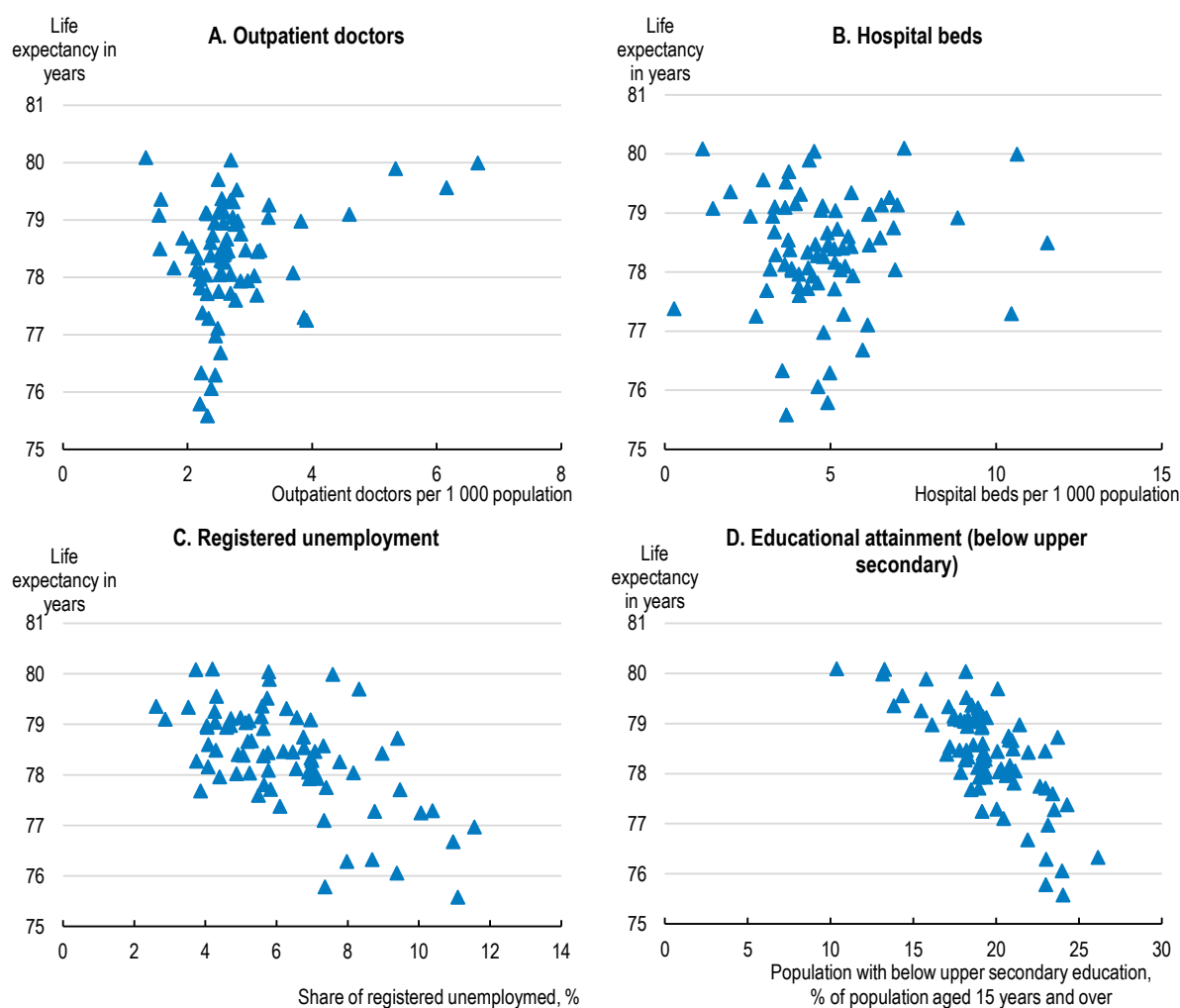
3. Defined as deaths from selected disease groups that could have been potentially avoided through good quality health care. Data based on Eurostat's list.

Source: OECD (2018), Health statistics (database) and Eurostat.

Health outcomes also vary significantly by region. Life expectancy at birth across districts differs by more than 4 years for both men and women. The larger cities such as Prague and Brno have the highest life expectancy and districts in the Ústecký region in the north the lowest one (Box 2). As doctor coverage across the regions is comparatively high with respect to most other OECD countries, the differences in health outcomes seem to reflect regional differences in socio-economic background. There is a significant negative correlation of life expectancy with the registered unemployment rate or the share of the population with only basic education (Figure 4). For example, the share of the low-educated population and the unemployment rate are both high in the Ústecký region. The number of outpatient or hospital doctors shows, however, only a weak positive correlation with life expectancy, reflecting the overall high doctor density across regions (Box 2).

Figure 4. Life expectancy is lower in socially deprived districts

2015



Source: Calculations based on data from Czech Statistical Office.

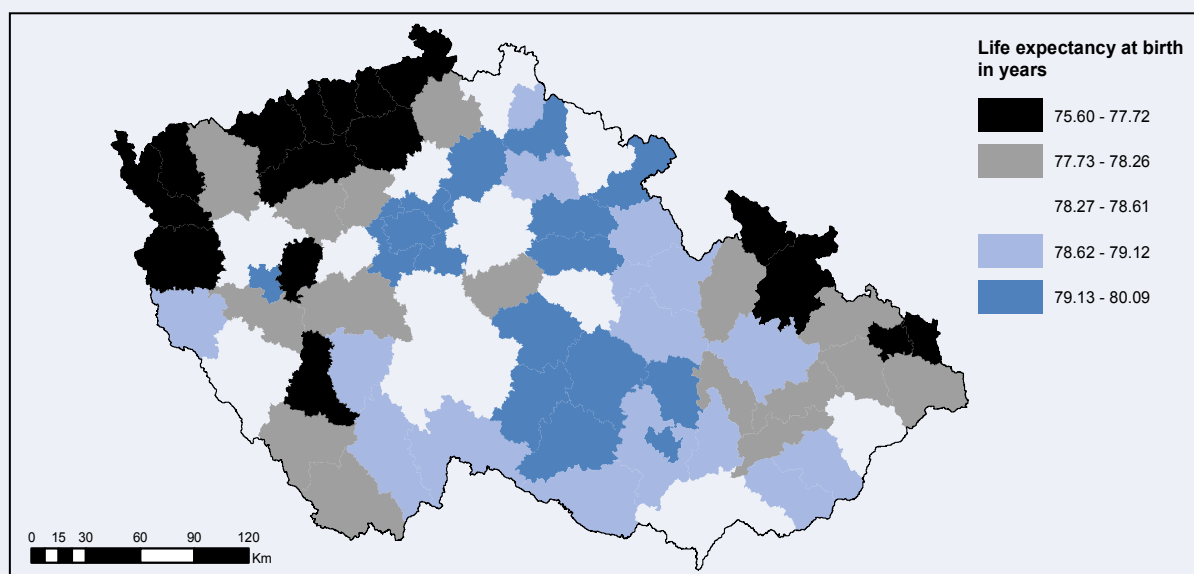
Box 2. Explaining regional variations in health outcomes

Understanding the drivers of regional variations in health outcomes is important to develop targeted policy solutions. Previous OECD work focussing on efficiency of the health care sector across countries found governance arrangements and institutional features to be the main explanatory factors, in addition to life-style and socio-economic characteristics (Joumard, André and Nicq, 2010^[3]). Within a country, framework conditions such as the institutional set-up, regulations and laws apply to all regions, thus regional inequalities in health outcomes are likely the result of structural differences. Depending on what drives the differences in health outcomes, targeted policies should be developed. For example, if socio-demographic characteristics are explaining the observed variation in health outcomes, policies to increase health literacy for populations at risk could lead to more equal outcomes.

In the Czech Republic, life expectancy varies significantly between the 77 districts. Geographical coverage of medical providers is evenly distributed. Differences in health outcomes are therefore likely to reflect variations in the quality of services, health status of the population, lower health literacy or prevalence of behavioural risk factors.

Figure 5. Life expectancy at birth across districts

Average of 2012-16, quintiles



Source: Calculations based on data from Czech Statistical Office.

Estimating life expectancy using factor analysis to capture the latent processes of the highly inter-correlated district specific variables (see the Technical Background paper for details) indicates a strong negative effect for socio-economically deprived districts. Thus, the most socio-economically deprived district has a 2.5 years lower life expectancy than the average, and 4.1 years compared with the least socially deprived district. Further, alcoholic consumption negatively affects life expectancy, particularly in the case of men (Table 1, Panel 6). Health care accessibility explains about 1.5 years

difference, between the district with the lowest and the highest density of doctors and medical facilities. Urban regions are slightly better off, with Prague at the top having approximately eight months of life extra beyond the average thanks to the urban amenities and the way of life. Environmental pollution has only little power in explaining the differences in health outcomes within the Czech Republic.

There are also gender differences in the urbanisation effect. It seems that for females, the city amenities do not bring such an advantage, or they are offset by negative aspects connected to urbanisation. One has to take into account that these effects are separated from the socioeconomic aspects, which certainly are correlated with the urban-rural pattern.

Table 1. Determinants that drive regional variations in health outcomes

Factor analysis on cross-section of 77 districts.

	(1) Min	(2) Max	(3) LE at birth	(4) LE at 65	(5) LE (fem) at birth	(6) LE (male) at birth
Urbanisation	-1.18	5.65	0.12 (0.05) *	0.13 (0.04) **	0.06 (0.06)	0.17 (0.06) **
Health care accessibility	-2.96	3.38	0.24 (0.05) ***	0.23 (0.04) ***	0.23 (0.06) ***	0.23 (0.06) ***
Socioeconomic deprivation	-1.96	3.07	-0.82 (0.05) ***	-0.47 (0.04) ***	-0.80 (0.06) ***	-0.85 (0.06) ***
Environmental pollution	-2.09	4.21	-0.04 (0.05)	0.02 (0.04)	0.01 (0.05)	-0.09 (0.06)
Alcoholic consumption	-1.30	3.37	-0.18 (0.05) **	0.06 (0.04)	0.04 (0.06)	-0.40 (0.06) ***
Average life expectancy			78.23 (0.05) ***	17.71 (0.04) ***	81.23 (0.05) ***	75.38 (0.06) ***
Adjusted R ²			0.80	0.69	0.75	0.78

Note: Statistical significance notation: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors in parentheses. Urbanisation is mainly defined by population density, education, knowledge-intensive business specialisation and also number of crimes per population as this is also a feature of cities. Health accessibility is composed from density of doctors and medical facilities. Socioeconomic deprivation is negatively connected to civic participation measured as election participation and positively to unemployment, social exclusion and gambling. Environmental pollution is based on concentration of SO₂ and particular matters in air. Alcoholic consumption reflects a combination of hospitalisation and mortality rates for alcohol-related diseases.

Minimum and maximum values express the range for every factor, while the mean values are always 0. It measures a deviation from average life expectancy and as such it is comparable between different factors.

Source: Based on data from the Czech Statistical Office, Institute of Health Information and Statistics (UZIS), Czech Hydrometeorological Institute, Ministry of Finance and Ministry of Labour and Social Affairs.

In addition to socio-economic, medical infrastructure and urbanisation factors, regional life expectancy might be the result of quality differences in medical care. Potential differences across districts in the quality of care are unobservable due to a lack of quality and performance indicators for the medical sector. For example, sorting of better skilled medical personnel into more attractive regions (i.e. with less crime and lower air pollution) could ultimately create differences in the quality of treatment and potentially explain the absence of effects. However, to identify potential sorting and quality differences and their effect on health outcomes requires better data that are currently not available.

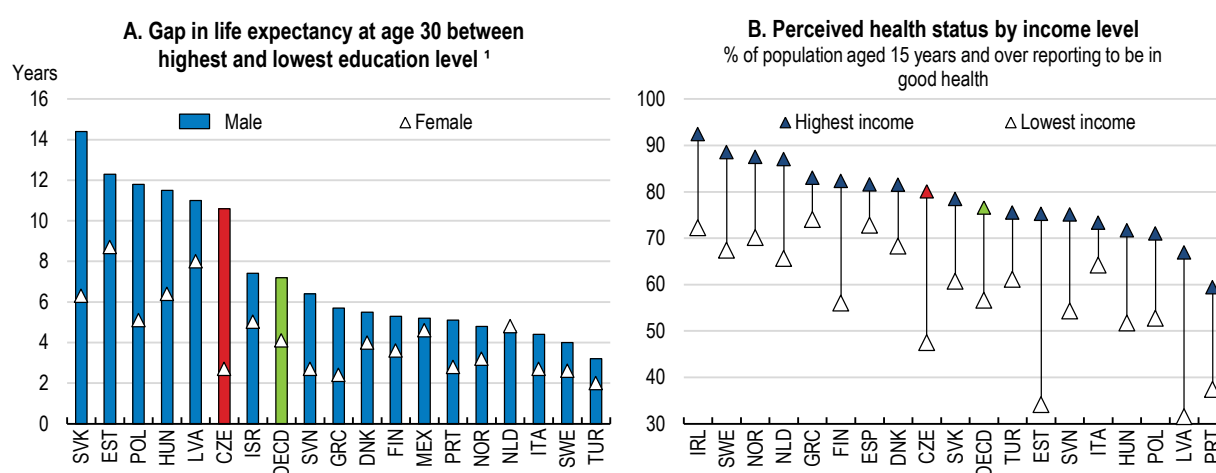
Health outcomes differ by socio-economic background

The universal coverage with a broad benefit package ensures equal access to health care regardless of socio-economic background. However, despite equal access, health outcomes

vary significantly by socio-economic status. The difference in life expectancy between the highest and lowest education levels at age 30 is especially high for men - 10.6 years versus 7.1 years on average in the OECD (see Figure 6, panel A). For women, the gap in life expectancy between the highest and lowest education levels at age 30 is significantly lower than for men, and with 2.7 years less pronounced than the OECD average of 4.2 years. As educational levels and income are positively correlated, the pattern is similar by equalised household income level. The gap between the share of individuals perceiving their health as good in the highest income quintile and the lowest income quintile is among the highest in the OECD, after Estonia and Latvia (see Figure 6, panel B). These disparities may be explained by financial access barriers, differences in living and working conditions, and in smoking and other risk factors.

Figure 6. Health inequalities by socio-economic status

2015 or latest



1. The figures show the gap in the expected years of life remaining at age 30 between adults with the highest level (tertiary education) and the lowest level (below upper secondary education) of education. Data for the Czech Republic is based on administrative data, but information on educational level is only available for about 30% of all deaths.

Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

Low-income households may have financial access barriers to certain health services. Whether the statutory equal access to health care is also reflected in practice remains an important but unanswered question. Limited data availability does not allow assessing whether systematic differences regarding quality of treatment or access to care exist for some population groups. While survey results have to be interpreted carefully, they suggest that unmet medical needs, though relatively low compared with EU countries, vary by education level (which in turn tends to be correlated with income). Respondents to the EHIS 2014 survey were more likely to state financial constraints as reason for unmet health care needs when they had below-secondary education (Eurostat, 2017^[5]).

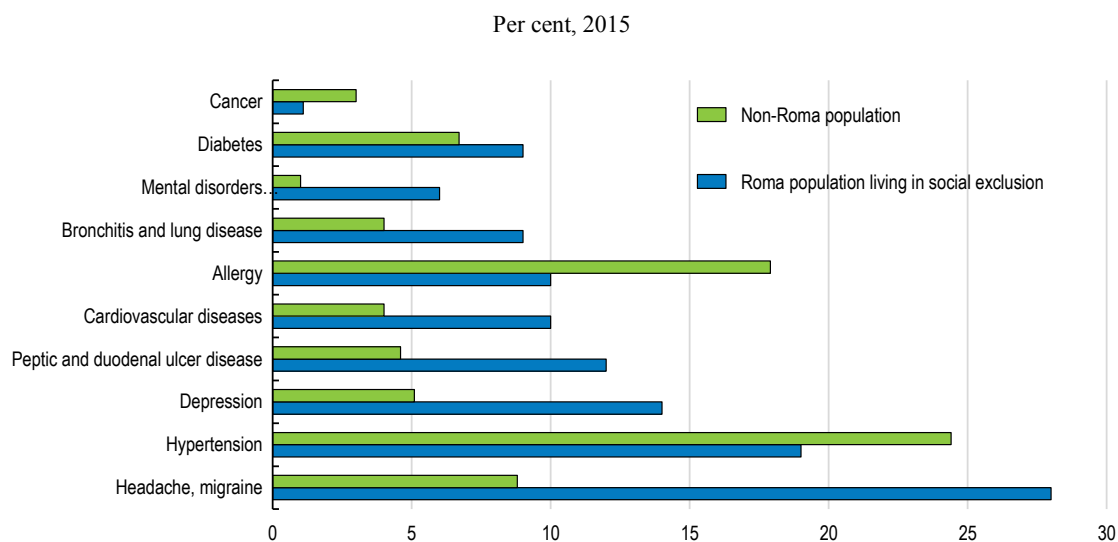
Despite the broad benefit package, financial barriers to access could be related to out-of-pocket payments. Although they are comparatively low in an international perspective, they may deter low-income people from seeking health care at the margin. For example, co-payments for pharmaceuticals may result in patients not following through with the

prescribed treatment due to financial constraints and limited knowledge of reimbursable generics (see below). In addition, prospective patients might be deterred to seek medical care if it requires the upfront payment of a registration fee for new patients or if it involves treatment that is not covered by the health insurance, such as most dental treatments. While no detailed information is available about the financial access barriers, most of the respondents with low education, which stated financial issues as reason for unmet health care needs, were referring to medical care and prescribed medicines (Eurostat, 2017^[6]).

The use of health care and health outcomes also differs between minority groups such as the Roma (2.5% of population) and the rest of the population. Although government statistics do not allow assessing whether minority groups face systematic differences in access to health care and in the quality of treatment, some estimates suggest that the Roma face significant health inequalities (International Organisation of Migration, 2016^[7]). For example, the life expectancy of the Roma is estimated to be 10-15 years lower than the majority of the population, and their infant mortality is twice the national average (Úřad vlády ČR, 2017^[8]).

Studies suggest that social status, poor living conditions and risky behaviour related to health are main drivers of morbidity and inferior health status. For example, smoking is widespread among the socially excluded Roma population - 65% for men and 57% for women (Úřad vlády ČR, 2017^[8]; Serrano Rodriguez and Rodríguez Derecho, 2009^[9]). Behavioural risk factors that are more common among the socially excluded Roma population, such as smoking, poor diet and alcohol consumption are closely linked to higher prevalence of diseases such as cardiovascular disease, diabetes and respiratory and digestive tract diseases (Figure 7).

Figure 7. Prevalence of diseases by Roma and non-Roma people



Source: The National Institute of Public Health (NIPH, 2015), “Podpora zdraví ve vyloučených lokalitách – snižování zdravotních nerovností”.

The existing (but scarce) data further indicate that the Roma use preventive and dental services less often (European Union Agency for Fundamental Rights, 2014^[10]). To increase health literacy and to address social and cultural differences, the Office of the Government supports programmes focused on reducing health inequalities in social exclusion areas with a high share of Roma population. There is, however, a lack of systematic support to train

and increase the awareness of health and social assistants with respect to social, cultural and language barriers of minority groups (Úřad vlády ČR, 2017^[8]). Targeted policies at minority groups should include preventive and educational programmes, in combination with health providers and social assistants being sensitised for minority population's risk factors and specific needs.

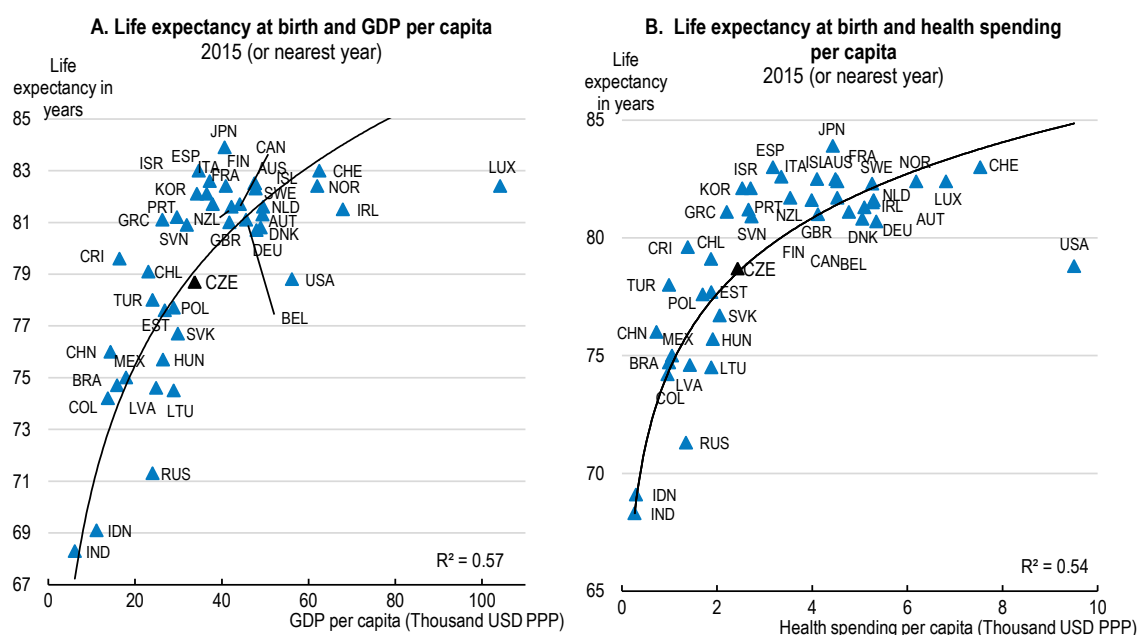
Health outcomes can benefit from health spending reforms

Raising health spending and efficiency can have large gains. Although Czech spending on health per capita is low in international comparison, it is among the highest compared with the CEE economies. However, this does not necessarily translate into better health outcomes. While life expectancy of the Czech population is higher than in Lithuania (4.2 years), Hungary (3 years), Slovakia (2 years) or Estonia (1 year), it remains about two years below Slovenia where spending on health is comparable (see Figure 8). Benchmarking the Czech Republic to countries with similar spending and institutional characteristics, suggests that health outcomes underperform. The Korean and Greek populations have higher life expectancy than the Czechs, despite slightly lower health spending per capita. Recent OECD work also shows that the Czech health status remains below the one of Slovenia, Korea and Greece, even when controlling for additional differences in life-style and social factors (Giorno and Londáková, 2017^[11]). This suggests that at current funding levels, the Czech health care system has room to increase efficiency and improve health outcomes.

OECD studies further suggest the potential for efficiency gains. Applying a Data Envelope Analysis (DEA), Dutu and Sicari (2016^[12]) find that when keeping health expenditure constant but spending it more efficiently, i.e. according to the best practice in the sample (Japan, Iceland, Korea), life expectancy could be increased by about 4%. Furthermore, increasing health spending could improve health outcomes further. OECD estimates based on a sample of OECD countries from 1990-2015 suggest that a 10% increase in health spending (or by about USD 245 per capita per year) is associated with a potential gain in life expectancy of about 3.5 months (James, Devaux and Sassi, 2017^[1]).

Figure 8. Life expectancy across the OECD

2015



Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris.
http://dx.doi.org/10.1787/health_glance-2017-en.

Improving the coherence and organisation of the health care system

Improving the management and regulation of the health care system

OECD research suggests that there is no single best health care model: each model has its strengths and weaknesses (Joumard, André and Nicq, 2010^[3]). In all systems incentives are designed to induce actors to behave appropriately in terms of delivering cost-efficient services and quality or limit overconsumption of health services, while regulation should guarantee fair competition and proper price signals (see Box 1).

The Czech health system is characterised by the state exerting strong control through price and volume regulations (Box 3). While this has kept costs down, efficiency and quality have suffered from asymmetry of information between three types of actors: insurance funds, health care providers and individuals. Thus, there is a lack of proper incentive mechanisms and price signalling (Box 3) suggesting that there is ample room to improve the efficiency and quality of the system.

Box 3. The Czech health care system

The current structure

The main features of the health care system were established in the early 1990s after the transition towards democracy. The principle of free choice of a health-care provider was introduced, and most of the primary care, non-hospital ambulatory specialist care, the pharmaceutical industry, pharmacies and spa facilities were privatised. Hospitals remained in public ownership, complemented only by a small number of private facilities that emerged over the subsequent years. Several laws were adopted that structure the system, in particular, the General Health Insurance Act (1991), the Act on the General Health Insurance Fund (1991), and the Act on Departmental, Professional, Corporate, and Other Health Insurance Funds (1992). The introduction of insurance funds transformed the health scheme into a health insurance (SHI) model.

Coverage, scope and financing

Health care is delivered as a public service by different types of providers, which are financed by the health insurance funds. The funds play a key role and though independent, they are heavily regulated. Health insurance works on the basis of solidarity, which means that contributions are not linked to health care received or to health status.

More specifically,

- **Coverage:** The health insurance system is universal. All employees and self-employed are subject to universal coverage through mandatory wage or revenue based contributions. Economically inactive persons (children, students, persons on parental leave, pensioners, unemployed, prisoners and asylum seekers) are covered by state contributions.
- **Scope:** Individuals have the right to choose their insurance fund. The range of benefits is very broad and includes inpatient and outpatient care, prescription pharmaceuticals, rehabilitation, some dental procedures, spa treatments and over-the-counter pharmaceuticals (if prescribed by a physician). Indeed, the Czech law stipulates that insured individuals are entitled to any medical treatment delivered with the aim of maintaining or improving their health status. In practice, however, benefits are rationed by legislation, formularies, an annual negotiation process between the health insurance funds and providers aimed at defining specific conditions of reimbursement and a fee schedule known as the “List of Health Services”.
- **Financing:** Compulsory, revenue-based contributions are the main source of health care financing, accounting for around 75% of the revenues of insurance funds and 54% of overall health revenues. The remaining share comes from the state as contributions for economically inactive people and out-of-pocket payments. The individual health insurance funds collect the monthly SHI contributions from employers and employees, from self-employed people, and from individuals without taxable income who are not insured by the state.

The functioning of the insurance scheme

People can choose between seven insurance companies. However, the General Health Insurance Fund (*Všeobecná zdravotní pojišťovna*, VZP) established in 1992 is the oldest and main insurance company. It covers the largest share of insured people. There is a redistribution mechanism between insurance funds according to a risk-adjustment scheme to correct selection biases. Up to 2017, the redistribution between insurance funds was based on a capitation formula taking into account age and gender. In January 2018, a new redistribution mechanism has come into force, which is based on pharmaceutical cost groups (PCG). Besides age and gender, it takes into account cost differences by diagnosis and therefore reflects the needs of chronically ill patients. Moreover, ex-post compensation of 80% and 95% of costs above thresholds stated by law is provided for “costly insured individuals” whose annual costs exceed these thresholds. This is intended to protect the health insurance funds from unexpected fluctuations in expenditure. The reallocation process is managed by the VZP through a special central account. Each month the health insurance funds report to the VZP the total amount of SHI contributions they have collected, as well as the age, gender and PCGs of their insured individuals.

Individuals can choose freely among the health insurance funds and may switch funds once a year either on 1 January or 1 July. Health insurance funds must accept all applicants who have a legal basis for entitlement; risk selection is not permitted. In fact, shifting is very limited as differences between insurance funds’ packages and their cost are small.

Indeed, the services provided by insurance funds are heavily regulated and they have limited leeway in contracting with health providers. The Ministry of Health acts as an arbiter in the purchasing process; it supervises annual negotiations between the health insurance funds and the providers to determine the conditions of reimbursement – including payment mechanisms – for specific groups of providers, such as acute care hospitals, GPs or ambulatory care specialists. Each year the Ministry of Health publishes a so-called Reimbursement Decree, which serves as a framework for defining specific conditions of reimbursement, such as payment mechanisms. These conditions act as amendments to the existing long-term contracts between health insurance funds and providers. If the negotiations between health providers and insurance funds fail, the Reimbursement Decree applies. Individual health care providers and health insurance funds further have an option to negotiate individualised reimbursement contracts regardless of the results of collective negotiations and Reimbursement Decree.

Recent reforms of the health system and measures introduced

Reforms in the last decade have aimed to increase the efficiency and transparency of health service provision, improve data systems, and contain costs. An important reform took place in 2003, when ownership of half of the hospitals was transferred from the state to the 14 newly formed, self-governing regions. Through this decentralisation process, some regions decided to change the legal form of some hospitals, by transforming them into private companies (of which regional authorities still own the majority of shares). There has been a mix of reforms but generally, implementation has been slow and many implementation processes are still ongoing:

- Diagnosis Related Groups (DRG) were introduced as early as 2007. However, it is not used as the main framework for reimbursement due to the difficulties in classifying and identifying costing of hospital cases. Hospital reimbursement is based on the global budget using DRG as a complement to estimate the changes

in volume of provided services. Long-term care (as well as outpatient hospital consultations) is reimbursed on a capped fee-for-service basis.

- In 2008, the introduction of user fees and co-payments for pharmaceuticals substantially increased the share of out-of-pocket payments, especially in the 2008-2012 period. In 2013, all user fees except the one for emergency services were cancelled by the newly elected government taking effect in 2015.

Source: Alexa J, Rečka L, Votápková J, van Ginneken E, Spranger A, Wittenbecher F. (2015^[13]); Czech Republic: Health system review. *Health Systems in Transition*, 17(1):1–165; Act 592/1992 Coll.; WHO Global Health Expenditure Database.

The Ministry of Health plays a central role, not only in determining health policy but in the negotiation process between insurance funds and health care providers (hospitals or GPs, for instance). Each year insurance funds and health-care providers negotiate the reimbursement rate of health services. But, as the ministry publishes annually a reimbursement decree that sets the prices of health care, the negotiation process is not genuine as one party (often health providers) tends to rely on the decree. Lobbying to obtain more favourable prices through the decree is prevalent, while the negotiation process has little influence. This weakens the capacity of insurance funds to negotiate lower prices to reduce cost, link prices to performance and reap efficiency gains.

The ministry also faces a dilemma between its responsibility to guarantee the financial sustainability of the system and its short-run interest as the owner of many hospitals and ultimately having to cover their eventual deficits. The decree also weakens the incentives of health-care providers to increase their efficiency and cost effectiveness as they can always rely on the reimbursement decree as a fall-back option. Having a genuine negotiation process between health care providers and insurance funds, reducing the scope of the reimbursement decree and/or its drafting entrusted to an independent commission would help solve some of the issues.

The regulation of the system rests heavily on volume limitations. As in most countries, the health basket is determined by law. The Act on Public Health Insurance (Act. No. 48/1997) defines access to health care and sets a range of procedures and services excluded either explicitly or implicitly. For instance, abortion, examinations requested by employers and various medical certificates are implicitly excluded as they do not meet the general requirement of maintaining or improving an individual's health status. Moreover, a negative list defines explicitly excluded services such as cosmetic surgery and some dental treatments. However, the Act on Public Health Insurance is complemented by a mechanism of "formularies", which is a positive list of approved pharmaceuticals, medical aids and dental aids that may be reimbursed under the health insurance system. Finally, the list of health services is updated annually, detailing the size of benefits and services covered.

The formularies and lists limit consumption and use of some services and care. For instance, for some treatments or above defined-standard care, partial coverage is not permitted. This means that patients cannot top up their statutory coverage by choosing a treatment that is more expensive or more efficient than what the coverage is offering and paying only for the difference. By strictly controlling treatment reimbursed and defining the standard of care, the system limits consumption and the use of more advanced technologies or pharmaceuticals at the expense of potentially more efficient treatments.

Overall, there is a need to rebalance the system towards more competition between health providers and insurance funds, and towards private funding to improve quality, efficiency

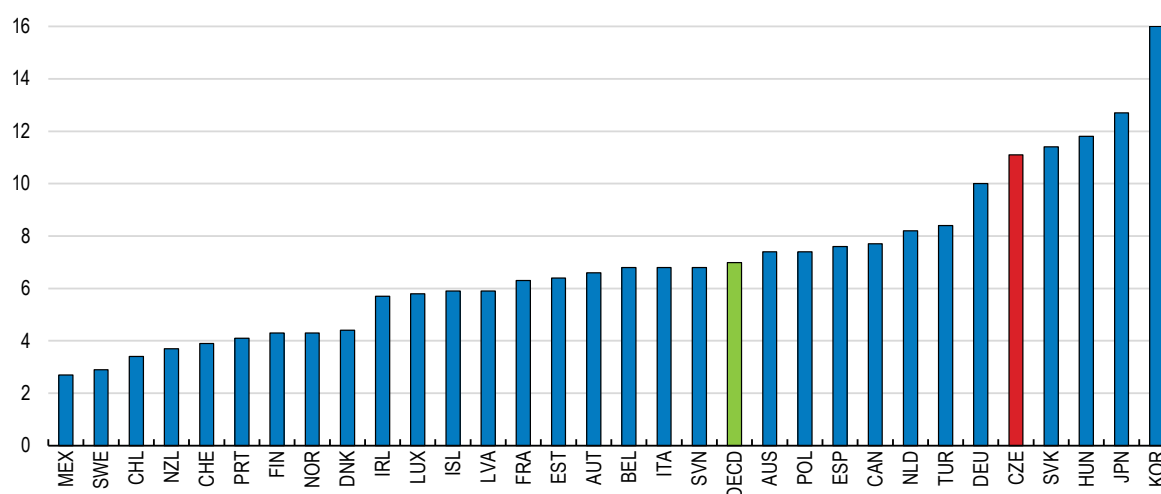
and reduce the reliance on public funding. As will be detailed below, the high reliance of the health care system on wage based contributions in the context of an ageing society will put pressure on public resources. There are different options to reform the settings of the health-care system:

- One option is to decrease the scope of the reimbursement decree by limiting the number of items covered but also leaving sufficient room for genuine negotiations between health providers and insurance funds. The negotiations should include ways to increase efficiency and quality of care among the counterparties to reimbursement prices. However, there would still be a need to allow for greater differentiations between insurance funds to make sure they are incentivised to guarantee the best quality at a cost-efficient way to their clients. This option can be complemented by increasing the share of co-payments on a broader basis than the current co-payment system which is focused on pharmaceuticals and some specific health care services. Although, some exemptions and ceilings in the annual amount of co-payments should be put in place to protect vulnerable groups such as chronically ill or low-income people.
- Another option is to introduce a two pillar system to strengthen the performance of the system while reinforcing its financial sustainability in the long term. The first pillar would be mandatory and include the same basket of services covered by the public system across all insurance companies. In that case, it is necessary to define what services are accessible to all without any financial barrier. These should include all essential and cost-effective care. However, what is defined as “essential” may differ according to national contexts and over time, and cost-effectiveness thresholds will depend on overall budget constraints. The transparency in how decisions are made on which services to include in the benefit basket is essential (OECD, 2015^[14]). The second pillar would be optional and individuals would be free to contract a complementary insurance policy with any insurance fund. As such, insurance companies would compete on this second pillar by designing complementary policy packages. However, there is another possibility to differentiate the two pillars. That is to define a percentage of reimbursement guaranteed in the first pillar and let individuals decide whether to buy a complementary insurance policy for the rest or pay out of pocket.

The organisation of the system does not provide a role for the patient as the end consumer of health care. The Czechs have wide access to GPs or specialists and, except for selected specialties (e.g. dentistry care, assisted reproduction, aesthetic surgery, etc.) or emergency outpatient care, no user fees exist. Medical care costs are not salient as incurred costs are paid by the health insurance fund directly to the service provider. Overconsumption might result as medical services are perceived as free by the patient. Indeed, the number of physician consultations per inhabitant is among the highest in the OECD and CEE-economies (Figure 9). As discussed below, reducing potential overconsumption is not addressed through incentives on the demand side but rather put on GPs and specialists who can have an upper threshold on the volume of their activities.

Figure 9. Czech's number of physician consultations is high

Per inhabitants, 2015 or nearest year



Source: OECD (2017) Health statistics (database).

A monitoring framework to evaluate the efficiency of the management of the health care system would raise efficiency and produce better outcomes. Identifying emerging challenges, developing policies and evaluating their performance once implemented requires the collection of adequate data. Input indicators measuring how much was put into the health system as well as output indicators measuring how much of health services were provided (e.g. doctor consultations) are partially available. However, outcome indicators assessing the achievement of health care delivered are lacking and need to be developed and monitored. While a new data collection system is under development, it is not yet systematically used to benchmark hospital performance or to control the quality of care. However, the new DRG system should allow for more benchmarking and performance management (see below).

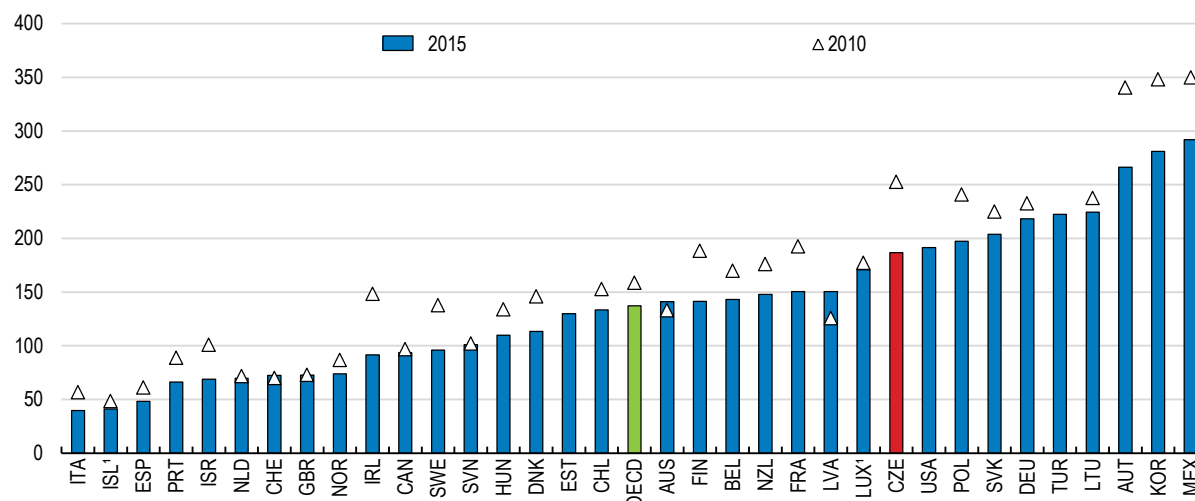
A performance-based data system is necessary for the monitoring and management of the health system. The amendment of the Act on Health Services in 2016 (Act. No. 147/2016 Coll.) provides for the building of a data system for monitoring health care quality. The registry is now set up, but consensus is needed among stakeholders on indicators and policy implementation. The amendment permits to set up a comprehensive National Registry of Reimbursed Health Services. It operates in co-operation with the health insurance companies and will contain most of the production and reimbursement data collected from the healthcare providers. Due to the broad scope of the collected data, the registry will be used to validate or even replace many current data collections within the National Health Information System. It will become the main data source for the production of performance indicators, namely those quantifying the inputs and the volume of provided health services. Further, outcome measures to capture the quality of care are being developed, i.e. in relation to the implementation of the DRG system.

The registry was launched in early 2018 and data collected are not yet used to monitor the quality of care or for pay-for-performance. The implementation should be accelerated to allow for quality measures and improvements in the reimbursement of health care and pharmaceuticals. In particular, it is needed for the reform of the DRG, which relies on developing unbiased output indicators. It will also be useful for the identification of areas where efficiency gains are possible and the monitoring of reforms.

Building on the registry, a systematic and regular assessment of the quality of care has to be implemented to improve the health system. As of now, quality control relies mostly on the assurance of minimal safety and quality standards through one-time accreditation (OECD, 2014^[15]). Indicators of quality of care could play an important role in improving performance through comparisons, reducing over diagnosis or treatment (OECD, 2017^[16]), and increasing access to health care. However, the Czech Republic has recently started reporting some of the health care quality indicators used by OECD member states to benchmark and compare performance. For instance, the avoidable diabetes hospital admission rates show that the Czech Republic, despite progress since 2010, has still room to improve overall management of diabetes through self-care, advice and education, and primary care treatment (Figure 10). The mortality after admission to hospital for ischaemic stroke shows no progress between 2010 and 2015 (Figure 11). Such information can help patients, practitioners and insurance funds to identify shortcomings or risks in the quality of care.

Figure 10. Diabetes hospital admissions in adults are decreasing

Age-sex standardised rates per 100 000 population, 2010 and 2015 or nearest year



1. Three-year average.

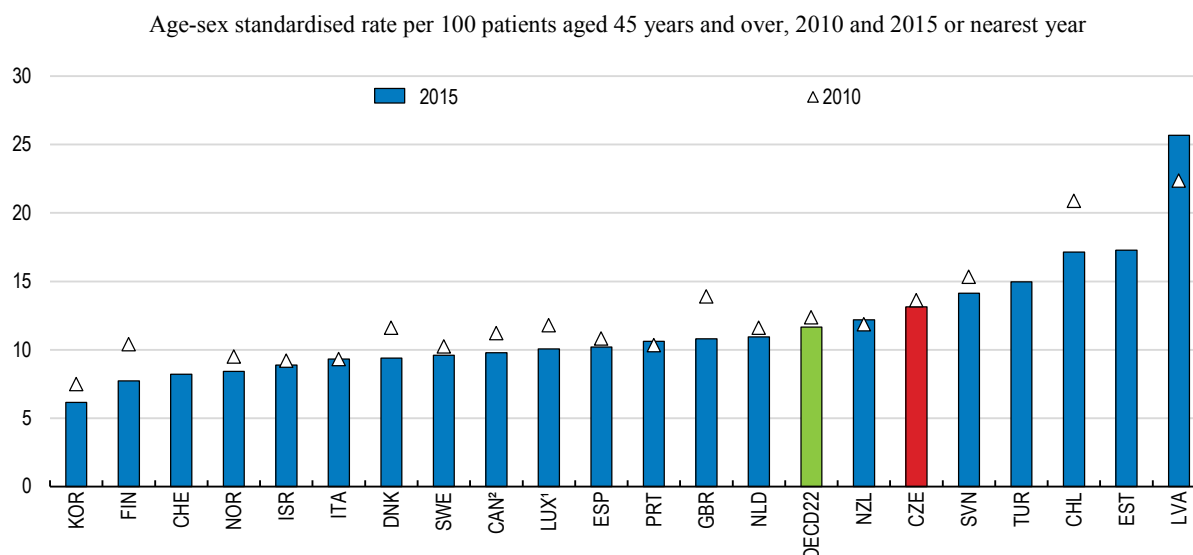
Source: OECD (2017), *Health at a Glance*.

The introduction of the new Diagnostic Related groups system offers an opportunity to regroup and systematically collect data on the outcomes of care from hospitals and health providers. Political initiative is necessary to increase the collection and use of quality indicators in the management of the system as there are inherently little incentives to drive quality improvement. Neither payment nor information systems are geared to encourage continuous quality gains, given that payments to primary care doctors are predominantly capitation-based, for example, and that indicators of the local quality of care are not routinely published (OECD, 2014^[15]).

Introducing bonus payments in form of pay-for-performance to service providers can support data collection while improving quality of care. Pay-for-performance payments are additional payments that complement the existing mode of payment and relate to achieving pre-defined targets. The impact of pay-for-performance scheme on quality of care varies with its set-up, the selected indicators and pre-defined outcomes as well as the amount received as reward. As such, cross country evidence on the impact of pay-for-performance

schemes provides limited evidence with regard to improved health outcomes and cost effectiveness, but was in general associated with an improvement in health data infrastructure and data availability with a greater focus on quality (OECD, 2016^[17]).

Figure 11. Thirty-day mortality after admission to hospital for ischaemic stroke is relatively high



1. Three-year average.

2. Results for Canada do not include deaths outside of acute care hospitals.

Source: OECD (2017), Health at a Glance.

Governance of the health care system

Responsibilities for health care are shared between the central government and sub-national governments within a clear organisational structure. The Ministry of Health sets the health policy agenda, prepares legislation, and administers the State Institute for Drug Control (SÚKL) and the public health institutes (Alexa et al., 2015^[13]). The authority of the regions is – while subject to the supervision of the Ministry of Health – divided into independent and delegated authorities. Within their independent authorities, regions are responsible for the establishment of regional health facilities, monitoring the quality of care of private health care providers and the preparation and implementation of subsidy programmes, e.g. for capital investments or operational costs (Table 2).

Furthermore, the regions are responsible for a set of delegated authorities from the state administration, such as authorisation and registration of health services, inspection and quality control as well as the provision of emergency services. For example, the regional authorities own emergency units, long-term care institutions (except for psychiatric facilities), some primary care facilities and medical spa facilities. Provision of health services through smaller hospitals are often under the responsibility of municipalities (Table 2).

Table 2. Responsibility for public health in the Czech Republic

National responsibility (Ministry of Health)	Regional responsibility	Municipal responsibility
- Health care - management of large hospitals	- Establishment and management of hospitals	- Health services, through both municipal hospitals and private doctors
- Public health protection, health research activities and directly controlled health facilities	- Nursing homes	
- Ensuring the safety, quality and rational use of pharmaceutical and medicinal products, precursors and additives; approving, licensing and monitoring pharmaceuticals and medical aids	- Facilities for physically and mentally disabled adults and children	
- The search for, protection and use of natural medicinal sources, natural spas and mineral water resources, medicinal products and technical equipment for prevention, diagnostics and treating people	- Monitoring the quality of health care delivery of private providers, jointly with professional medical chambers; monitoring refers to a minimum set of criteria for material and technical equipment, as well as qualification of medical staff which are set by the Ministry of Health.	
- Health insurance and health information systems	- Ensuring that non-state providers comply with a variety of laws and directives that define the technical, staffing and hygienic requirements before registering and thereby allowing them to offer health services	
- The use of biocide preparations and introduction of biocide preparations and agents to the market		

Source: Adapted from Council of Regions (2017^[18]), “Public Health”, <https://portal.cor.europa.eu/divisionpowers/countries/MembersNLP/CR/Policy-Areas-Obligatory/Pages/Public-Health.aspx> (accessed December 2017).

Good governance of health care is crucial for the system to be able to adapt quickly to new objectives and priorities. While the responsibilities within the health care system across the levels of government are clearly defined, overlapping responsibilities between the Ministry of Labour and Social Affairs and the Ministry of Health regarding long-term care create inefficiencies. Long-term care is provided through the Ministry of Labour and Social Welfare for a person with reduced self-sufficiency resulting from deteriorating health. The Ministry of Health is responsible for long-term care in terms of the provision of health care without which the patient’s state of health would deteriorate. Payment for care delivery under the two systems differs, creating incentives for seeking long-term care in the medical rather than in the long-term care setting. Better co-ordination between policy sectors is therefore needed to reduce inefficiencies in the supply of long-term care.

The development of an e-health system offers an important potential to improve the governance of the health system through better information collection and allows to reap efficiency gains and to implement a smart pay-for-performance system. An e-health system is discussed but has not been introduced. However, e-prescription has been introduced as mandatory since the beginning of 2018 (with a year suspension of sanctions for the case of non-compliance). After 6 months, uptake of e-prescription was about 80%. However, this step has to be closely monitored to ensure that especially old doctors are not favouring retirement over investing in the required technology. This would pose a threat to health care provision especially in rural areas.

The use of new technologies to improve the efficiency of communication between doctors and health insurance companies has not yet been implemented. The current setting of the system should facilitate its introduction as it is already heavily centralised and health providers’ remuneration depends already on transmitting certain information. As is many

countries, shared private health data through electronic health records faces resistance due to data privacy issues. However, the development of digital systems is focusing on security issues. A voluntary policy is needed to subsidise the equipment of health providers or raise remuneration, train the users and put in place judicial rules that reassure people on the use of the information.

Improving the delivery of health care

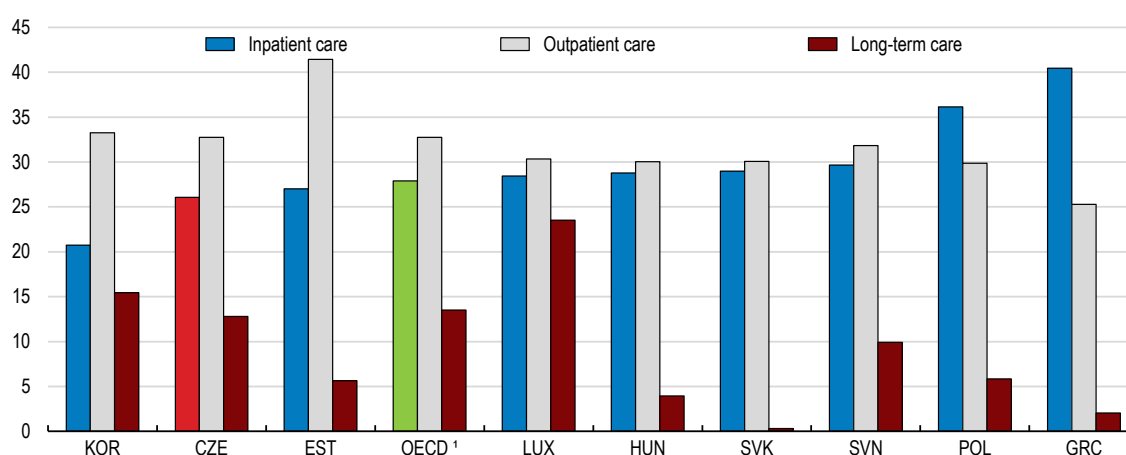
Reforming hospital management and inpatient care

The allocation of resources, the effectiveness of treatments and the appropriateness of care received are important parameters for the efficiency of the system. There are different ways to optimise health spending and effectiveness, for example by streamlining procedures, adjusting treatment methods or creating economies of scale through co-ordinated care provision.

Overall, greater use of outpatient care tends to be more cost effective than inpatient care. It limits waiting times and is the most appropriate treatment method for many interventions (ambulatory surgery). The inpatient care (mostly hospitals) sector accounts for 26% of total spending compared with 29% in the EU and 28% across the OECD in 2015 (OECD, 2017^[2]). In contrast to other CEE economies, which like the Czech Republic inherited a large hospital sector, the outpatient care is the biggest sector with 33% of health spending while long-term care and medical spending, though around the OECD average, are less important (Figure 12).

Figure 12. Health expenditure by type of service

Percent of current expenditure on health, 2015 or nearest year



Note: Inpatient care refers to curative-rehabilitative care in inpatient and day-care settings. Outpatient care includes home-care and ancillary services.

1. The unweighted average of the latest available year excluding Australia, Chile, New Zealand and Turkey.

Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris.

http://dx.doi.org/10.1787/health_glance-2017-en

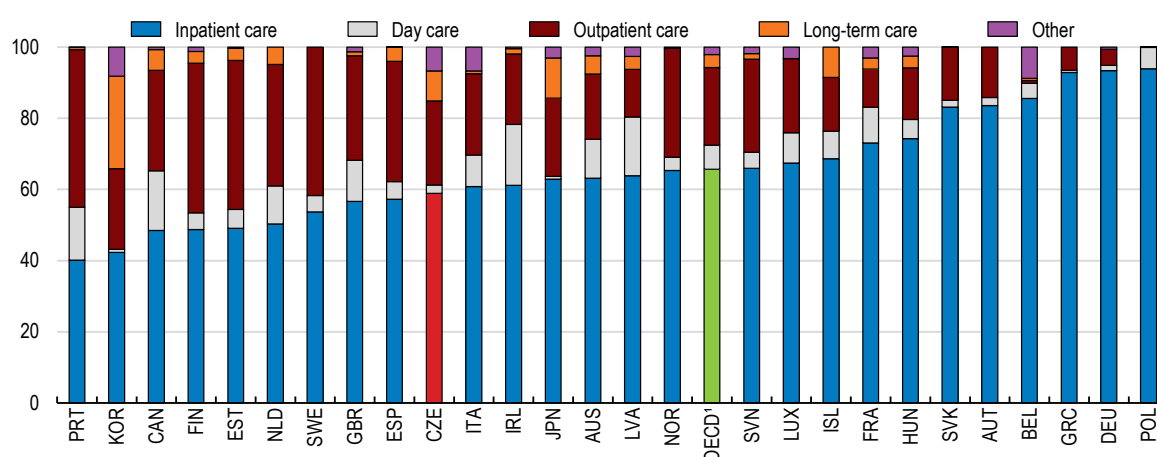
Inpatient and outpatient care are the main components of hospital expenditure. Health spending on long-term care is also important and represents 8% of hospital spending (Figure 13). While across the OECD there is a shift from inpatient care to day care in search for efficiency, in the Czech Republic day-care spending at hospital remains limited (an

estimated 2% of hospital spending). More effort should be put to shift inpatient care towards day care as it lowers spending. Monitoring the development of new medical technologies will help in developing day-care.

New medical technologies – in particular the diffusion of less invasive surgical interventions – and better anaesthetics have made day care interventions possible, and reduced the unit cost per intervention by shortening the length of a hospital stay (OECD, 2017^[2]). However, the impact of the rise in same-day surgery on overall health spending may not be straightforward since the reduction in unit cost (compared to inpatient surgery) may be offset by the growth in the volume of procedures performed. There is also a need to take into account any additional cost related to post-acute care and community health services following these interventions.

Figure 13. Hospital expenditure by type of service

Percentage of hospital expenditure, 2015 or nearest year



Note: Outpatient care includes ancillary services. Data on day-care spending in the Czech Republic faces methodological issues and might be underreported.

1. The unweighted average of the latest available year excluding Chile, Denmark, Israel, Mexico, New Zealand, Switzerland, Turkey and the United States.

Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris.

http://dx.doi.org/10.1787/health_glance-2017-en.

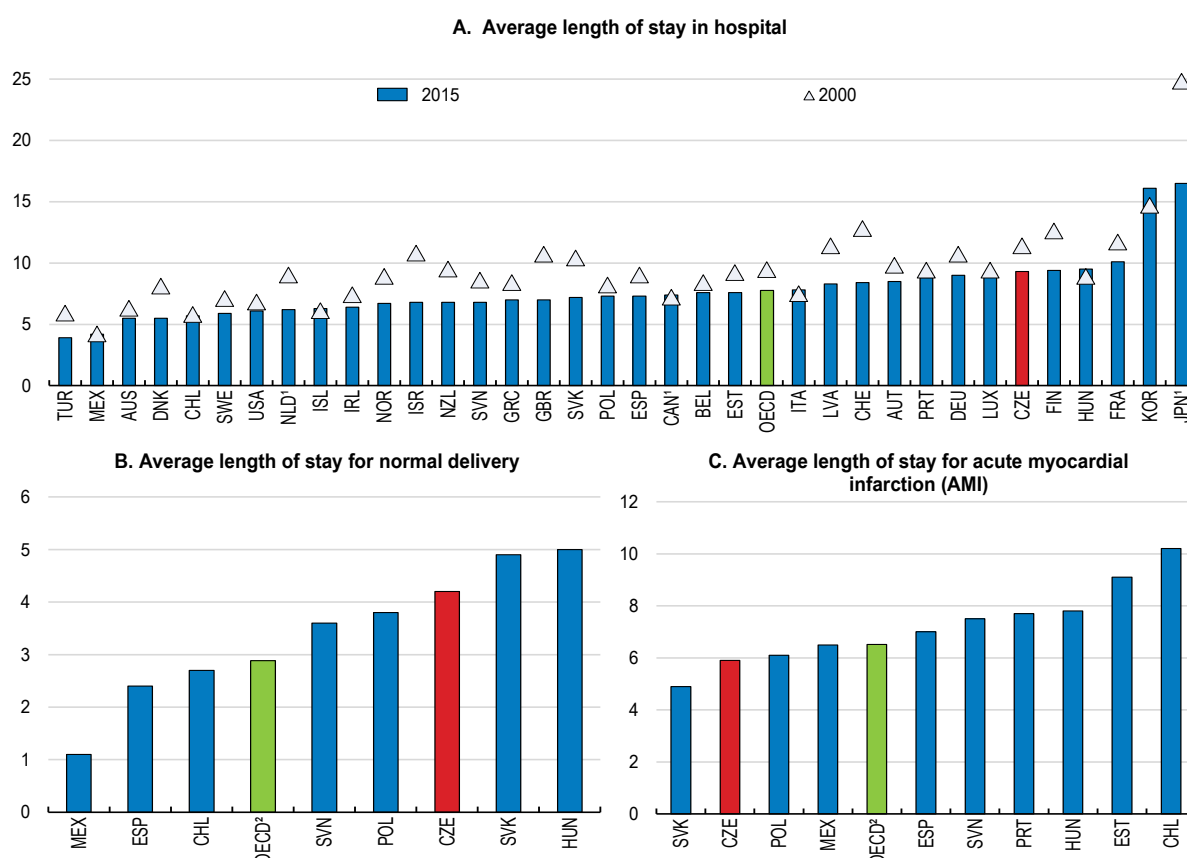
Moreover, progress in reducing the average length of a hospital stay, which at 9.3 days (2015) remains well above the OECD average (of 7.8 days), would bring some efficiency gains (Figure 14, Panel A). Reducing the length of stay can be achieved through the advancement of treatments as well as on the backbone of good primary care such that patients can be discharged earlier from hospitals without compromising their recovery. It is in particular the average length of stay for normal delivery which is high compared with other countries (Figure 14, Panel B). However, advancements in ambulatory procedures are helping to reduce the average length of stay. For instance, cataract surgery treated as day care surgery increased to 95% compared with the OECD average of 86%. In several countries, nearly all cataract surgeries are performed as day cases (OECD, 2017^[2]).

However, the Czech Republic has improved significantly in the coverage and treatment of mental care shifting from in- to out-patient care. The number of persons treated as outpatients for mental illness doubled since 2000 reaching almost 700 000 while inpatient treatments have decreased. A reform is currently being implemented with European funds

to improve the quality of life of people with mental illness by the restructuring of services, the creation of a functional network of care facilities and a new approach in the support of patients. The new approach aims to provide timely diagnosis and treatment of basic mental disorders through better support of co-operation between primary care and specialised psychiatric services. The network of existing general and specialised psychiatric outpatient clinics and surgery of clinical psychologists will be completed and community care expanded.

Figure 14. The average length of stay in hospital is above OECD average

Days, 2015 or latest



1. Data refer to average length of stay for curative (acute) care (resulting in an underestimation). In Japan, the average length of stay for all inpatient care was 29 days in 2015 (down from 39 days in 2000).

2. OECD average is the unweighted average of the OECD available countries.

Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris.

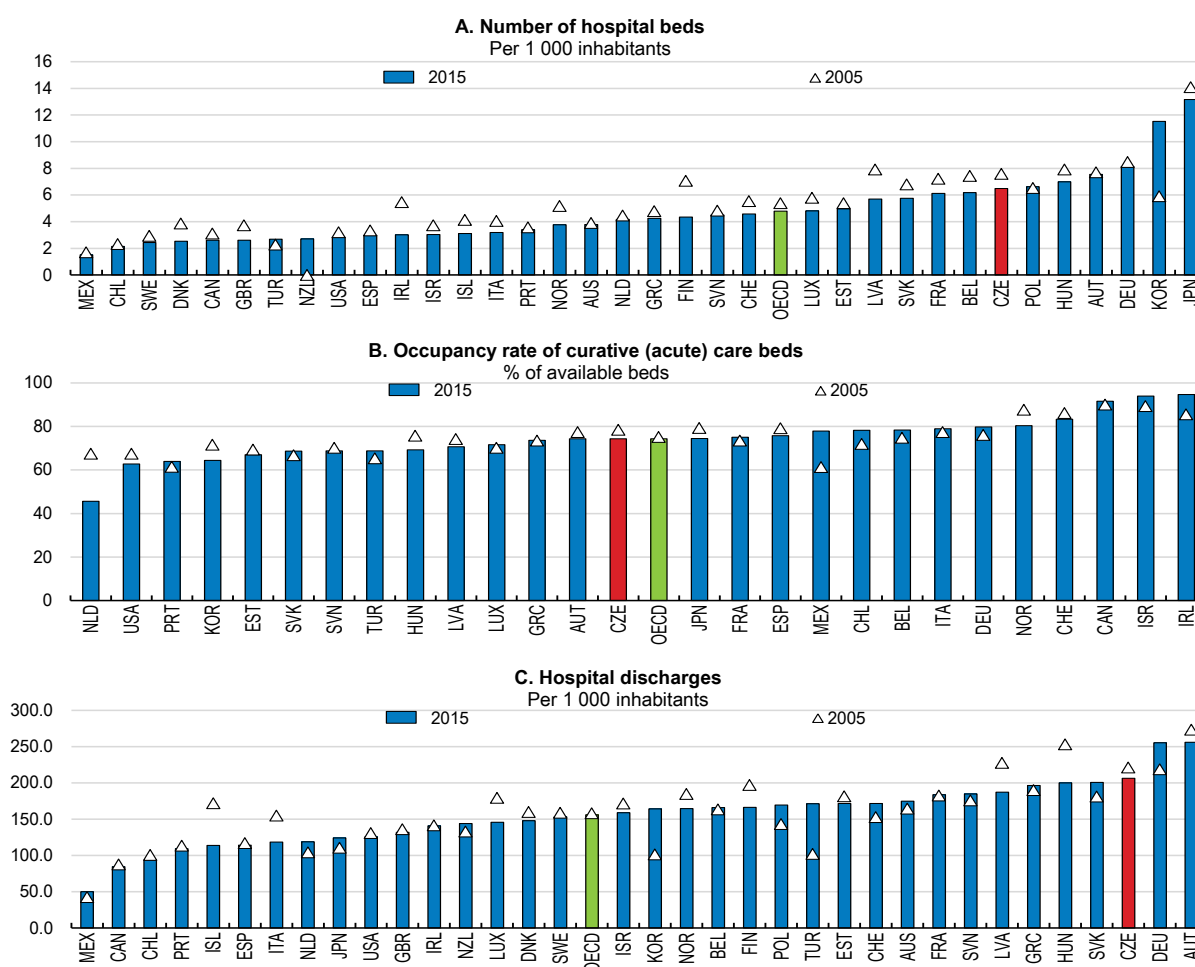
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The Czech Republic inherited a health system focused on hospital care from communist times, which still contributes to inefficiencies. Albeit declining since 2000 the number of hospital beds (6.2 per 1 000 inhabitants) is still above the OECD average (4.7) (Figure 15, Panel A). However, long-term care use of hospital beds influences the assessment of the number of hospital beds. The high number of beds also correlates with the total number of hospitals which are not always well allocated geographically. Better co-ordination of neighbouring municipalities and regional hospitals by merging and regrouping of some

services could further enhance the efficiency of the hospital sector as well as improving the overall quality of care.

The combination of numbers of hospital beds, occupancy rate and hospital discharges indicates that the number of hospital beds could be further reduced (Figure 15, Panel B and C). While the occupancy rate is close to OECD average, the high number of hospital discharges (at least one night at the hospital) compared to OECD indicates that occupancy rates are potentially mirroring sub-optimal choice in treatment and use of hospital resources. Rather than shifting towards day-care, patients seem to be admitted to inpatient care to keep occupancy rates up indicating inefficient management of hospital resources.

Figure 15. Hospital care capacity is still high



Source: OECD (2017), OECD Health Statistics (database).

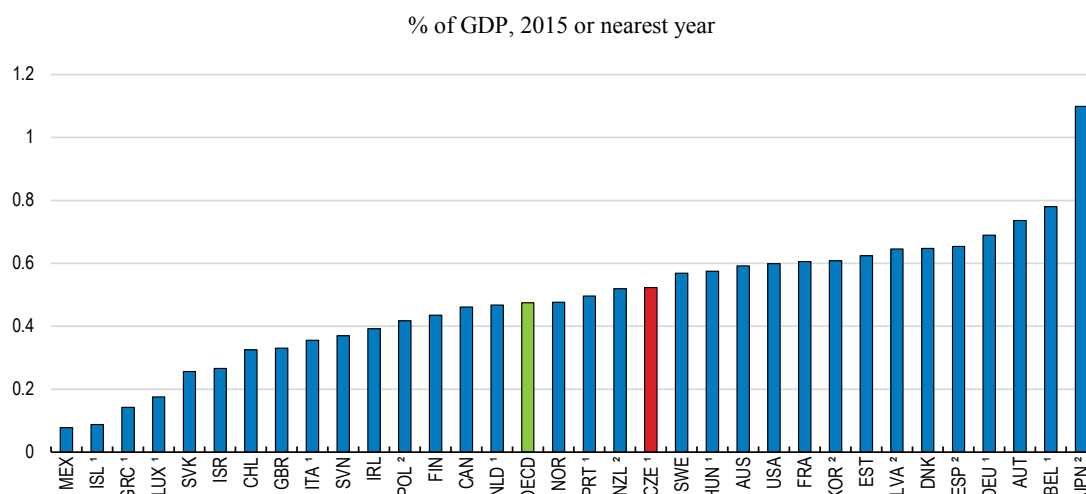
The remuneration scheme should be used to incentivise hospitals to search for efficiency gains. After a succession of changes in the remuneration scheme of hospitals, it has stabilised since 2012 consisting of a combination of four different reimbursement mechanisms, including case payments based on Diagnostic Related Groups (DRGs), individual contracts, global budgets and fee-for-service payments for hospital outpatient care. Reimbursement based on global budgets modified through DRGs mix is now the main source of hospital revenues (more than 70%).

The Czech DRG system is based on the International defined DRG system. 1 057 groups exist currently. The groups were initially created by the National Reference Centre (NRC). Since 2015 it is under the Institute of Health Information and Statistics (ÚZIS). However, since 2014 the relative weights list published every year by the Ministry of Health has not been updated. The relative weights were calculated based on data from only 12 hospitals, which provided the data on a voluntary basis. The current system is not functioning properly and does not reflect the real cost of health services. It does not allow to benchmark hospital performance in terms of efficiency and best practices and select the subgroup that is used to set prices.

A new DRG system has been under preparation for a couple of years under the programme “DRG Restart”. It is currently being tested by a representative sample of over 40 hospitals on a voluntary basis and the results will be compared with the current system. The development of the new DRG system should be accelerated. It should be based on a broad group of hospitals to guarantee enough variance in the information collected for each type of health services. The DRG system should then be used for setting the prices of health services but also to incentivise or reform underperforming hospitals based on a group of best-performing hospitals.

In addition to the overcapacity illustrated by the number of hospital beds, there are issues around the quality of infrastructure. Many psychiatric institutions, long-term care and nursing facilities, and small rural hospitals are in need of modernisation (OECD and European Observatory on Health Systems and Policies, 2017^[19]). Given the quite high number of hospitals and facilities and the low level of spending, it is not surprising that capital investment is not sufficient to maintain the quality of infrastructure and equipment. Investment in physical capital in the health sector at 0.5% of GDP is around the OECD average (Figure 16).

Underinvestment is partly explained by the reimbursement scheme which does not take into account the use of infrastructure. Therefore hospitals and health care facilities rely on public subsidies and EU funds for investment. Health infrastructure investment and modernisation should be better planned and co-ordinated across regions, as well as follow an integrated approach in the financing of health at the hospital, regional and ministerial level. For example, the management of acute ischemic strokes has been re-grouped in stroke centres and resulted in major improvements. As a result, the probability to receive the necessary treatment below the recommended threshold of 60 minutes is among the highest in the EU.

Figure 16. Investment in the health care sector remains modest

1. Refers to gross fixed capital formation in ISIC 86: Human health activities (ISIC Rev. 4).

2. Refers to gross fixed capital formation in ISIC Q: Human health and social work activities (ISIC Rev. 4).

Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris.
http://dx.doi.org/10.1787/health_glance-2017-en.

Reforming the primary and outpatient care sector

Outpatient care can be provided at hospitals or by GPs and specialists in private health facilities or at individual offices. The health system suffers from a lack of co-ordination of primary care between GPs, specialists and outpatient hospital care. Patients' ability to access specialist care without a prior GP consultation, poorly defined mutual responsibilities of outpatient specialists and GPs and current payment systems mean that primary care's potential for instance to lead chronic disease management is not being fulfilled (OECD, 2014^[15]).

The absence of a gate-keeping role by GPs is weakening the organisation of the primary and outpatient care. In theory, insured persons must be registered with a GP, dentist, gynaecologist and/or paediatrician for children. However, patients are free to consult a specialist directly or to go to hospitals without passing by their referring doctor which they often do. There is no sanction or incentive to respect the referent doctor process.

This opens room for excessive outpatient care in hospitals at the expense of emergency care and inpatient care. There has been discussion to introduce strict gate-keeping by introducing fees for patients that go to see a specialist without referral, but according to anecdotal evidence it is resisted by the population, specialists and even some GPs. One of the reasons is that GPs are not trusted to properly perform the gate-keeping role. GPs should be entrusted with a greater gate-keeping and co-ordination role. This would ensure that patients are better directed to most appropriate place for their treatments (specialists or hospitals) when necessary. It would also allow to diminish the overuse of hospital facilities and support their refocussing on complex and intense treatments.

The remuneration of GPs and ambulatory care is contributing to the rigidities of the health system. Since 1997, GP reimbursement is based on a system of risk-adjusted capitation fees. In certain rural or remote areas, GPs may be compensated with a higher capitation if the number of registered patients is significantly below the national average (more than 30% below). Also, GPs who accept to work longer or to be flexible in patients'

appointments receive a bonus. However, some services, such as preventive examinations and home visits are paid under the fee-for-service system (around 10 to 15% of GPs revenues; Alexa et al., 2015^[13]). Since 2007, ambulatory care specialists are paid under a system of capped fee-for-service up to a pre-defined threshold adjusted annually. Above the threshold, reimbursement fees decline (Alexa et al., 2015^[13]).

One incentive for insured people to register with a GP is that it facilitates access by limiting waiting times compared with ambulatory providers. Though there is no mandatory threshold in the number of registrations a GP can take, some GPs reject or discourage further registrations above certain limits. This is due to either workload or because some insurance funds decrease capitation fees for additional patients if they deem the number of registered patients too high.

Another factor contributing to high consultations of outpatient services is the number of certificates requested from patients for reasons unrelated to health. For instance, employees often have to provide a doctor's certificate from the first day of absence onwards, otherwise their absence is considered unexcused. This appears unnecessary as the first three days of sick leave are unpaid and contribute to the excessive number of outpatient consultations.

The level of remuneration of doctors and medical workers is not an issue as the ratios of Czech doctors and medical workers revenues to average earnings are fairly comparable to those of OECD countries (OECD, 2017^[2]). However, the design creates disincentives to work more for some GPs. Anecdotal evidence suggests that some GPs and specialists limit their activity after reaching a certain volume because of the decreasing reimbursement (Alexa et al., 2015^[13]).

A better mix of capitation fees and fee-for-service should be implemented, in particular for GPs. Increasing the share of fee-for-services in GPs' revenues could be linked to more effective prevention activity and retraining. Also, introducing co-payments would bring more responsible behaviour by insured individuals and GPs with regard to their patients. For example, to not exclude certain population groups, co-payments could be imposed when patients seek specialist advice without GPs referral. For both GPs and specialists, the remuneration should include more quality-based components. Developing e-health and including incentives for GPs and specialists to co-operate through an electronic health system would also increase efficiency and limit the number of consultations and duplication of acts due to information sharing.

Designing a long-term care strategy adapted to an ageing society

The demand for long-term care has increased in the Czech Republic as in other OECD countries in recent years. The impact of ageing is already weighing on the capacity of long-term care provisions. The share of the population aged 80 years and over is estimated to rise from 4% in 2015 to 9% by 2050. The current organisation and financing of long-term care is not prepared to absorb such increases in demand. Long-term care spending represented 1.3% of GDP in 2015 (OECD, 2017^[2]), of which 82% is for inpatient long-term care. Long-term care spending in real terms has been increasing by 5% annually over the last ten years, faster than the OECD average (OECD, 2017^[2]) and represents more than 10% of health care spending (Figure 17, Panel A).

The social and health care aspects of long-term care have different organisation and funding structures (ministries of Social Affairs and Health). While efforts to increase co-operation between the two ministries have tried to optimise the efficiency of patient care, substantial differences in funding create perverse incentives in the use of hospital facilities. Residential

long-term care facilities and other social services are financed by central, regional or municipal budgets, whereas health care facilities for long-term inpatient care are financed primarily through the health insurance.

Since 2007, new legislation based on the principle of free choice of social services provides a care allowance to individuals rather than to institutions. It also introduced a funding mechanism that permitted (a) health-care facilities to finance some forms of social care from the state or regional budgets; and (b) social care facilities to finance some services through contracts with the health insurance funds.

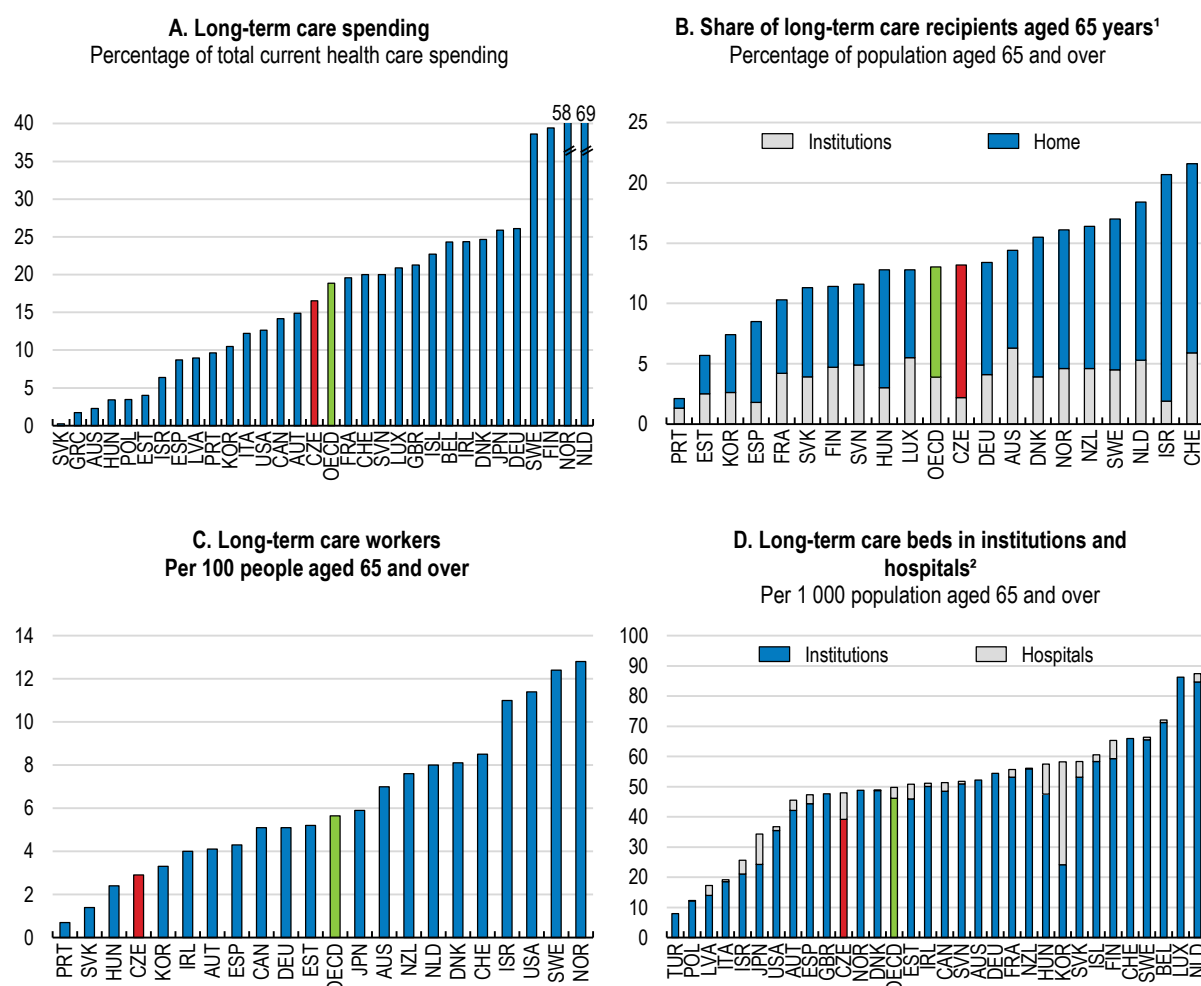
The individual care allowance led to lower budgets for established care institutions and to the development of informal carers. The monthly allowance varies between CZK 880 (EUR 34.70) and CZK 13 200 (EUR 520.50) depending on health status and age. Individuals can use the allowance to remunerate informal carers including family members. It seems that there is a mismatch between the supply of affordable residential long-term social care facilities and demand (Alexa et al., 2015^[13]).

A lack of co-ordination and differences in reimbursement of health care provided in hospitals and long-term social care establishments contribute to the inefficient use of hospital services. For example, user fees were abolished for health-care services, but still exist in social care, creating incentives to seek long-term care in higher-cost medical care rather than in social care (OECD and European Observatory on Health Systems and Policies, 2017^[19]). This has led to over-use of long-term inpatient care of hospitals (Figure 17, Panel D). The occupation rate of these hospitals beds is around 100%. In particular, the average length of stay is prolonged unnecessarily because of the lack of places in care institutions. This situation is further aggravated by the reimbursement policy, which is more favourable in the health care system and is based on per-day reimbursement which incentivises longer stays.

There is a need to support the development of care institutions and to harmonise the reimbursement policy of health care provided in hospitals and other facilities. Regional authorities should be incentivised to ensure that enough long-term care institutions exist within their borders, taking into account future developments. The development of comprehensive home care offers an alternative to hospitalisation. Comprehensive home care is a service of care and assistance provided to patients within their own social environments. It is a medical service provided by nurses under physician supervision and reimbursed by health insurance funds. The development of comprehensive home care should be favoured as an alternative to a lengthy stay in a hospital. The level of the social care allowance should be means-tested to ensure that individuals who wish to enter a social care institution can also afford it. To limit undue increases of the cost of social care institutions, a contractual policy can be set up with these social care institutions in terms of pricing.

Figure 17. Long-term care

2015 or latest



Note: OECD average is the unweighted average of the data shown.

1. Data for Czech Republic refer to 2009 data.

2. The numbers of long-term care beds in hospitals are not available for Australia, Switzerland, Turkey and the United Kingdom.

3. Long-term care share of total health care spending doesn't include social long-term care spending.

Source: OECD (2017), OECD Health Statistics (database); OECD (2017), *OECD Economic Surveys: Slovak Republic 2017*, OECD Publishing, Paris. http://dx.doi.org/10.1787/eco_surveys-svk-2017-en and OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

The ageing of health practitioners is threatening access to health care

The number of physicians and health practitioners has been increasing over the last twenty years and is above the OECD average (Figure 18, Panel A). The physician density is with 5.7 and 4.2 doctors per 1 000 population in urban and rural areas respectively (Figure 18, Panel B).

Although the number of doctors currently is relatively high, the high average age of doctors may soon result in supply constraints affecting coverage and quality of care. Between 2000

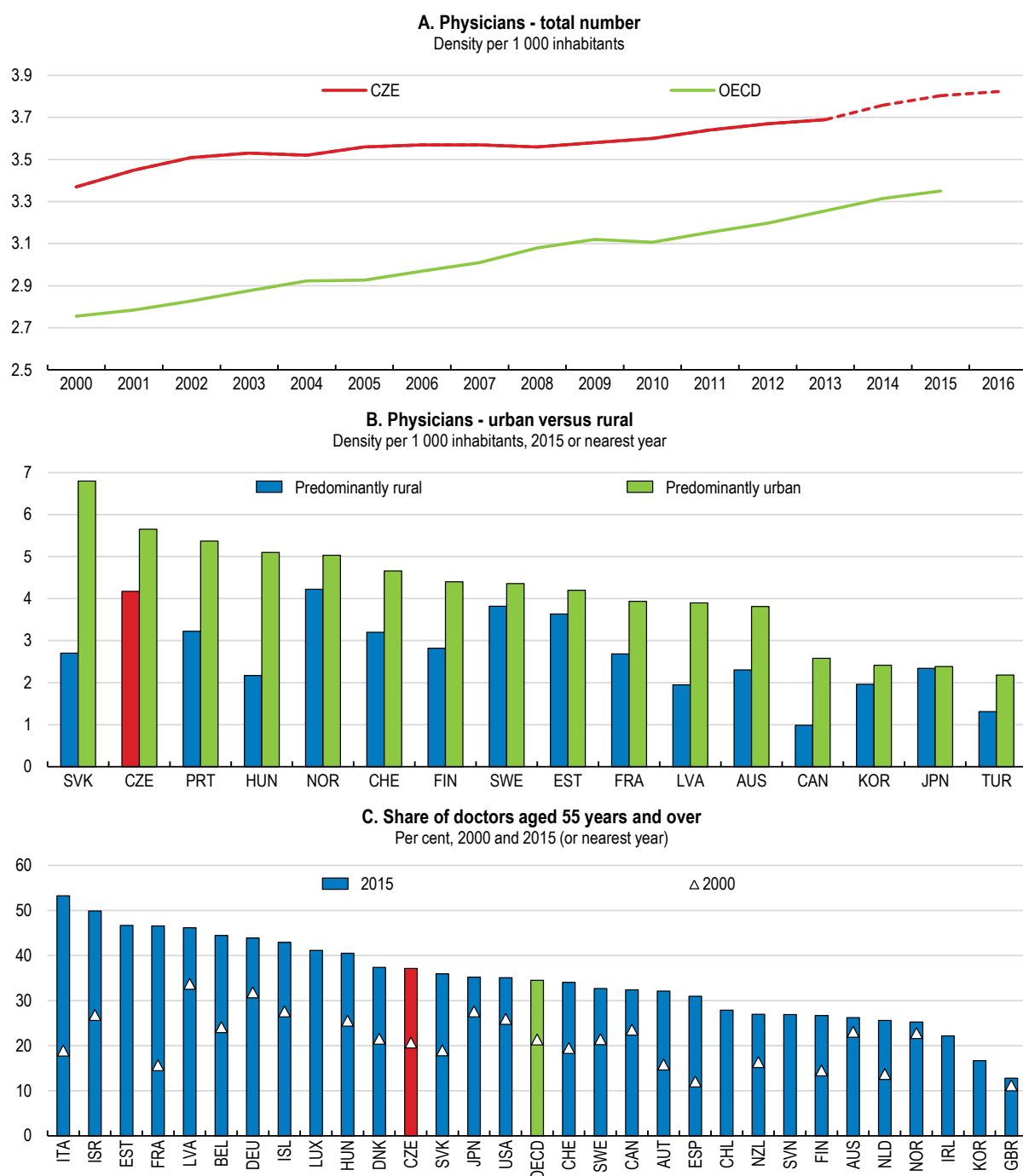
and 2015, the proportion of doctors above 55 years has increased from 20% to 37%, one of the highest in the OECD (Figure 18, Panel C). Among general practitioners, the share of doctors close to retirement is even higher. In 2017, about one out of three general practitioners was aged 60 years or older (ČLS-JEP, 2018^[20]). Within the near future, the retirement of these doctors poses a threat to maintain the accessibility to health care, especially in rural areas (OECD and European Observatory on Health Systems and Policies, 2017^[19]; OECD, 2017^[2]).

The mix of doctors providing basic and special primary care is also unbalanced with significantly fewer generalists than specialists. 19% of doctors are generalists compared with 30% in the OECD on average (OECD, 2017^[2]). As primary care plays a key role for a well-performing health system, the low share of GPs creates serious barriers to its performance. The ageing of doctors can also be an issue for life-long training and the skill mix. The incentives in the system, in particular, the heavy regulation of the activities of GPs are not rewarding and may limit the investment in life-long training by practitioners. As old GPs are less likely to undertake retraining to update their practices, they are less trusted to play a gate-keeping role.

Emigration of doctors is also affecting the number of practitioners, though the emigration rate is below the OECD average (Figure 19). Higher wages and better perceived working conditions abroad are pushing Czech doctors to migrate or work abroad. Given the proximity to Germany, emigration rates might not capture the whole picture as doctors may commute to Germany for work, benefiting from better wages and work conditions. The number of Czech doctors working in Germany has more than doubled since 2010, from less than 500 to more than 1 000 (Bundesärztekammer, 2017^[21]; 2011^[22]). There is a need to retain doctors as well as create incentives to attract more Czech students to enrol in health faculties and also doctors from abroad to ensure sufficient supply in the medium to long-term.

Though there is no formal limitation in access to health studies in terms of exams or requirements, faculties may restrict the number of students accepted due to capacity limits. International students who study in English pay tuition fees, which contribute to the budget. However, they can add to capacity constraints. In 2016, these international students were about 16% of total students in health care faculties (ÚZIS, 2018^[23]). In the short-run, due to the rapid ageing of Czech doctors, a plan should be put in place to increase the capacity of Czech health faculties and the number of students that remain within the Czech Republic. Financing of medical faculties should therefore be adjusted accordingly to guarantee that they have enough resources to cope with increasing the number of students.

In principle, Czech legislation guarantees access to doctors and to health facilities within a reasonable distance and time. To increase the incentives for doctors to settle in more remote areas, a subsidy programme has been designed that covers the cost of setting up a new medical clinic. In addition, greater reimbursements from health insurance funds are used as additional measure to create incentives for doctors to settle in remote areas. These incentive programmes should be closely monitored and regularly evaluated to adjust to emerging needs in a timely manner.

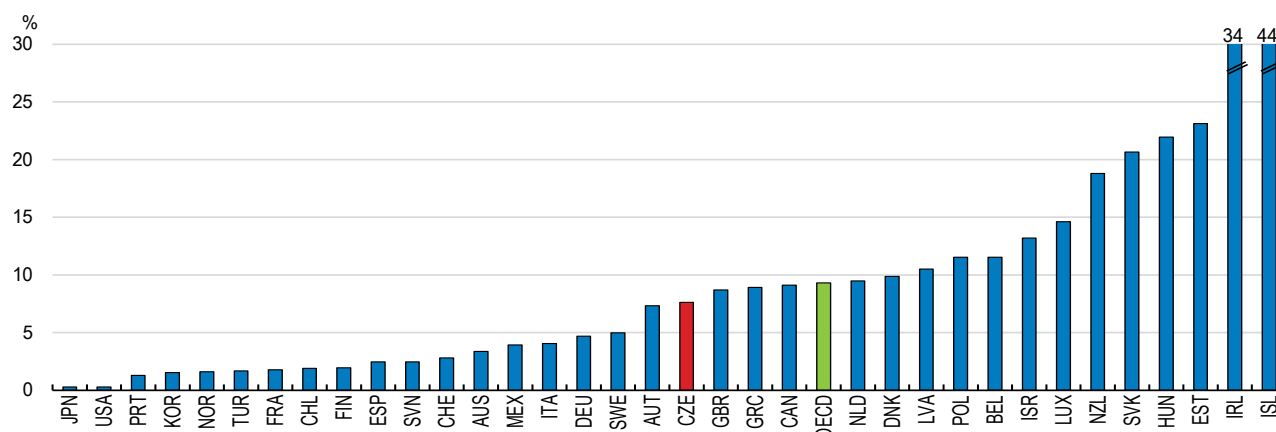
Figure 18. Evolution in the number of practising physicians

Note: Unweighted OECD average. Panel A: Data for the Czech Republic from the OECD Health Statistics database up to 2013. From 2014 onwards numbers are estimated on the basis of UZIS data on personnel capacity of doctors in healthcare (registered and contractual doctors) and applying a correction coefficient to align with available information of previous years. Panel B: Czech Republic, numbers refer to FTE, including additionally pharmacists.

Source: OECD (2018), Health Statistics (database); UZIS (Institute of Health Information and Statistics of the Czech Republic), Zdravotnictví ČR: Personální Kapacity 2016; and OECD (2017), Health at a Glance 2017.

Figure 19. The Emigration rate of doctors is high

Percentage of total number of doctors, 2015 or nearest year



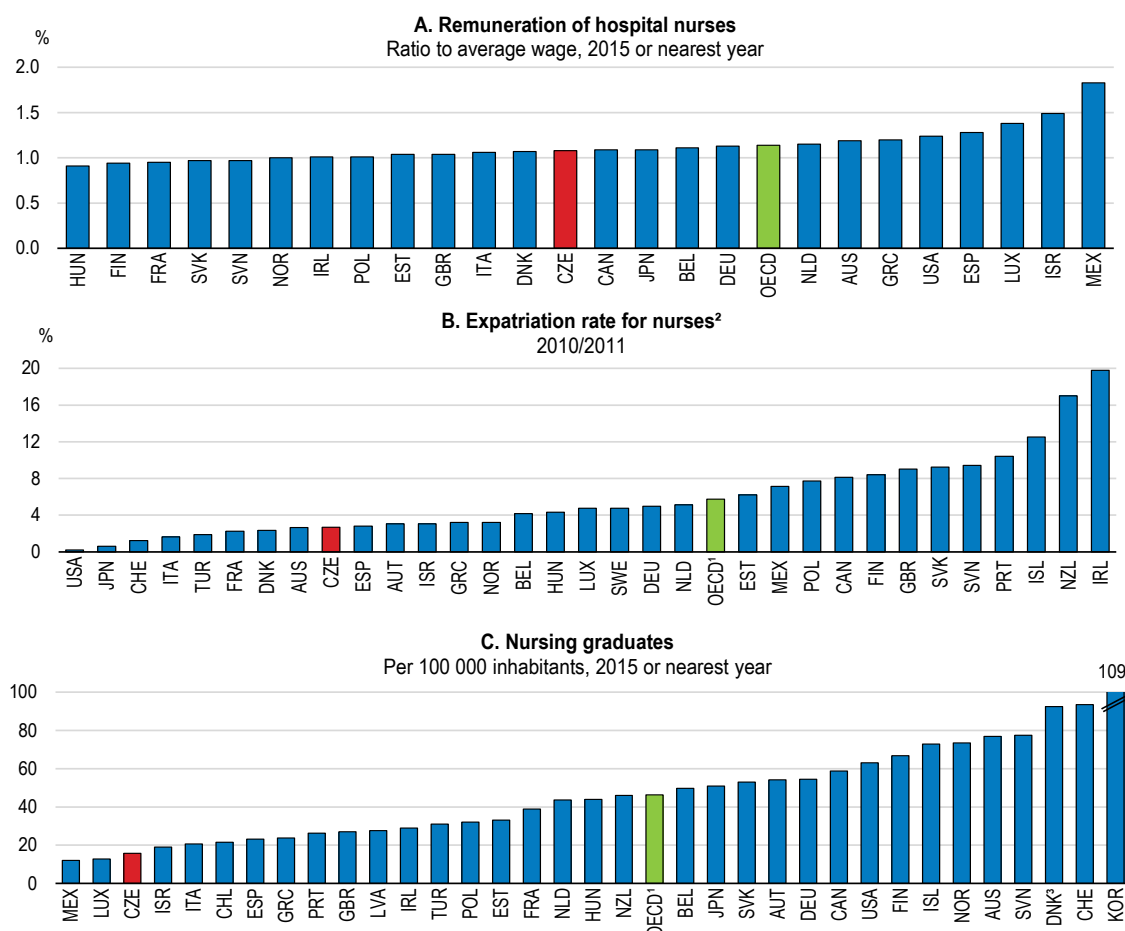
Note: Share of doctors trained in the country, but working abroad. 2014 for Denmark, Japan, Sweden and the United States. Data for OECD is the unweighted average of available country data.

Source: OECD (2017), OECD Health Statistics (database), Eurostat and UZIS (Institute of Health Information and Statistics of the Czech Republic).

In contrast to doctors, the number of nurses at 8 per 1 000 population is slightly below the OECD average (9 per 1 000 population). The ratio of nurses to doctors is also below the OECD average (OECD, 2017^[2]). The Czech Republic has among the lowest number of nursing graduates in the OECD - 16 per 100 000 population (Figure 20, Panel C)—with a decreasing trend in recent years.

While the remuneration of nurses is not particularly low in public hospitals compared with other OECD countries, it is, however, low in private health care facilities (Figure 20, Panel A). Moreover, the low remuneration in the private sector does not create an incentive to enrol in nursing studies.

Given the ageing dynamic of the population, the demand for graduate nurses is increasing, in particular in the long-term care sector. Therefore, more effort is needed to increase the enrolment of students in nursing studies. In particular, a better regulation of wage settings in the private sector through sectoral or branch negotiations could help to close the gap with the public sector and attract more students. Adapting career prospects to make the nursing profession more attractive, for instance by allowing greater responsibilities along the career path, for example in preventive programmes and patient education of chronic diseases as is the case in the UK (Delamaire and Lafortune, 2010^[24]).

Figure 20. Nurses related indicators

1. The unweighted average of the data shown.

2. The destination countries refer to OECD countries only.

3. In Denmark, the number refers to new nurses receiving an authorisation to practise.

Source: OECD (2017), OECD Health Statistics (database) and OECD (2015), "Expatriation rates for doctors and nurses, 2010/11" in International Migration Outlook 2015.

Managing health spending and strengthening financial sustainability

Main drivers and evolution of spending

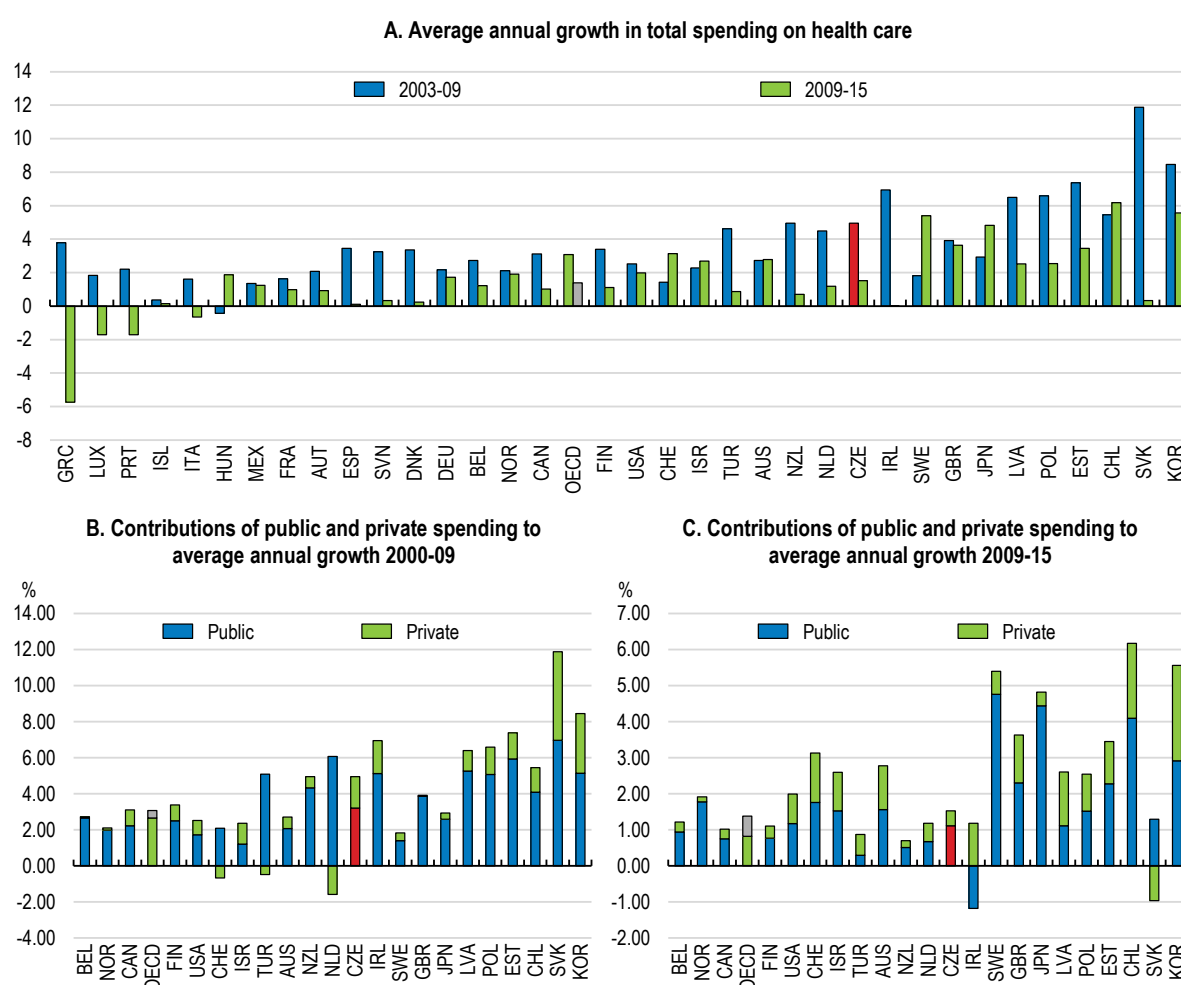
Spending on health care has remained stable since the economic crisis and the share of public spending in total spending is at 82.4% among the highest in the OECD (OECD, 2017^[2]). Over the last 15 years, some financial responsibility was shifted to the consumer. Voluntary and out-of-pocket payments increased since 2003, reaching 17.6% of health care expenditure in 2016 (OECD, 2017^[2]). Still, out-of-pocket payments remain below the OECD average of about 20%, with most out-of-pocket spending on pharmaceuticals and other medical non-durable goods.

Over the years, the composition of spending has slightly changed (Figure 21 and Figure 22). While the data has to be interpreted carefully due to breaks in the time series between 2012-13, some tendencies were visible already before 2013. The share of

government spending on medical goods decreased, which was offset by increases in voluntary and out-of-pocket spending. Moreover, private spending for rehabilitative and curative care increased since 2009, which could indicate higher cost through user fees introduced in 2008 (Figure 22). The shift towards private spending weakens the heavy reliance on public spending and can support the funding in other parts of the health care sector that will need more resources in the future. Since 2013, public spending on long-term care increased slightly. To further adapt to the needs of an ageing society and the accompanying rise in expenditure the freeing of financial resources from other parts of the health care sector will be required.

Figure 21. Growth of health care spending

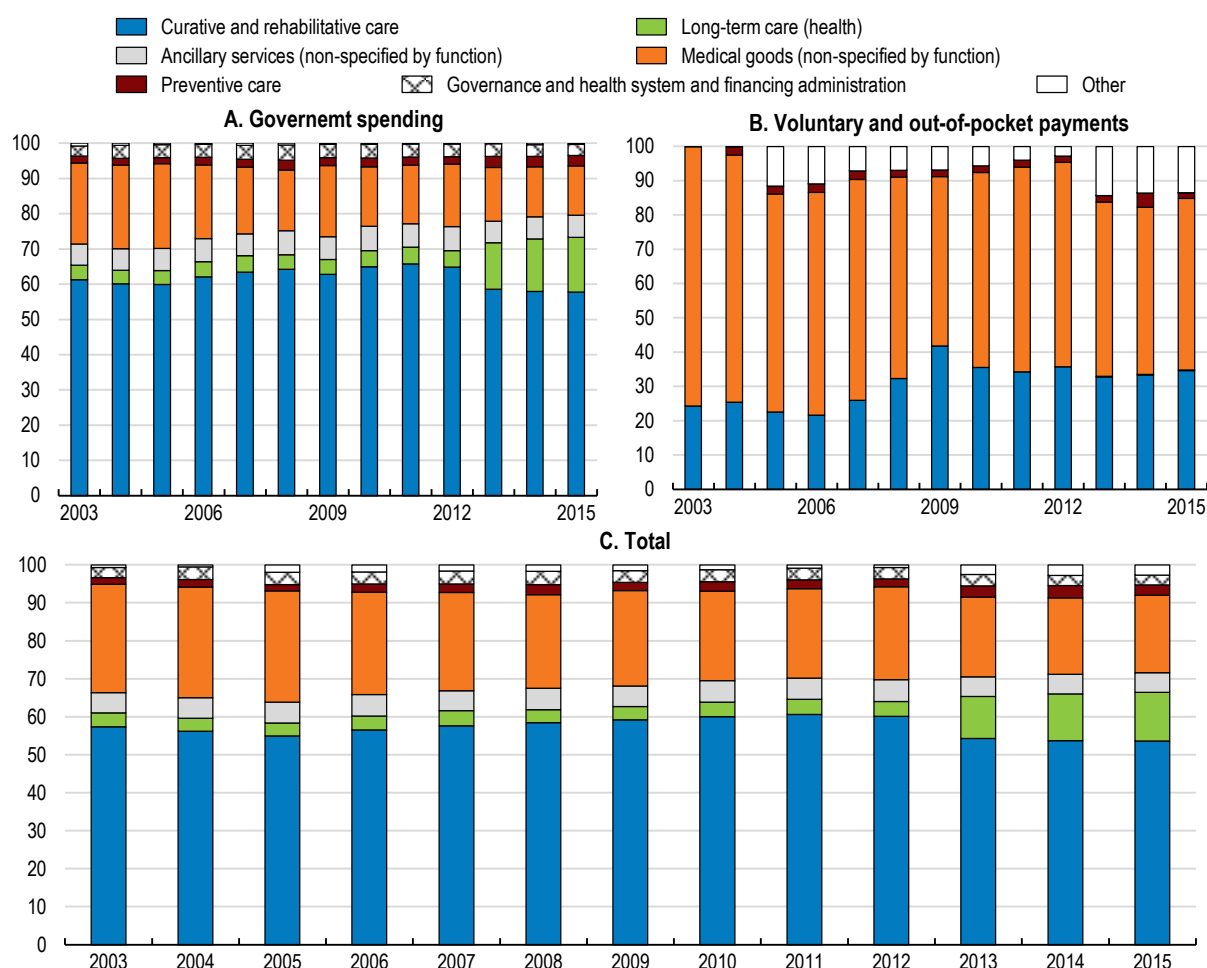
per capita real health spending



Source: Calculations based on OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

Figure 22. Composition of health expenditure

Per cent, 2003-15



Source: Calculations based on OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

To raise the efficiency of health spending, the government has initiated a shift from inpatient to outpatient care and day care and changes in the spending pattern since 2013 indicate a small shift from inpatient to outpatient care so far (OECD, 2018_[25]).

The decline in spending in the pharmaceutical sector towards the OECD average is an example of better cost efficiency. To improve the control and transparency of pharmaceutical spending, the State Institute for Drug Control (SÚKL) has been responsible both for setting the maximum ex-factory price and for decisions on reimbursements since 2008. Prices are only regulated for reimbursable pharmaceuticals, and are set at ex-factory or statutory prices. The ex-factory price of a certain pharmaceutical is set as the average price of the three lowest manufacturing prices of the particular drugs in reference countries. In combination with reimbursement rules that incentivise customers to purchase generic substitutes, price growth has slowed due to a higher share of generic drugs (see Figure 23).

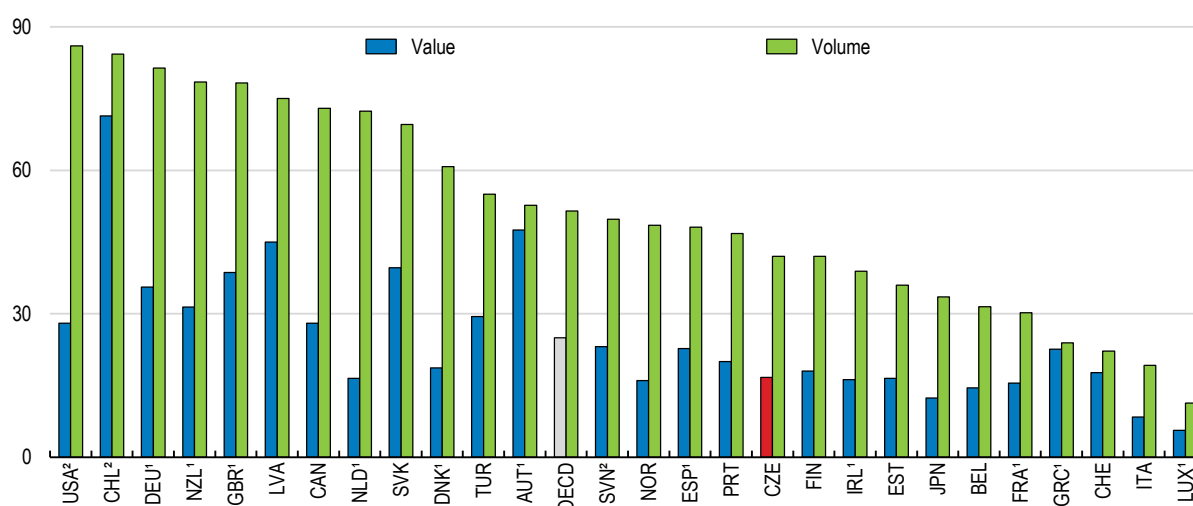
The penetration of generic drugs is a policy priority. Since 2008, a doctor can either prescribe the generic or the original drug. If not explicitly prohibited on the prescription,

the pharmacist can further substitute the prescribed drug with a less expensive pharmaceutical product that has the equivalent therapeutic effect. Since 2008, the share of generics rose from 28% to 42% in 2015, but still remains below the OECD average of 52% (OECD, 2018^[26]). As pharmacies in the Czech Republic are remunerated by a regressive mark-up-scheme, pharmacists do not face a loss of income when substituting the original product with the generic.

To further encourage the take-up of generic pharmaceuticals, customer awareness needs to be strengthened. To incentivise patients to purchase a generic over an original product, the Czech system uses reference prices for a group of products. The cheapest one – usually a locally manufactured generic – is fully reimbursed, whereas the patient has to pay the difference when opting for an alternative (see Box 4). Despite this incentive scheme, an empirical study by Votápková and Žilová (2016^[27]) suggests that consumers are still more likely to choose the original pharmaceutical product over the generic one for fear of generic products being of lower quality. Better information regarding the equal quality of the original product and the substitute could therefore strengthen the take-up of generics. To further encourage the substitution of generic drugs, health insurance funds could incentivise practitioners to prescribe generics through a pay-for-performance scheme (as e.g. in Japan).

Figure 23. Share of generics in the total pharmaceutical market

Per cent, 2015 or nearest year



1. Reimbursed pharmaceutical market.

2. Community pharmacy market.

Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris.
http://dx.doi.org/10.1787/health_glance-2017-en.

Box 4. Reimbursement policy for pharmaceuticals

Reimbursement is based on reference groups, which are groups of pharmaceuticals with similar effectiveness, safety profile and clinical use, and are considered to be therapeutically interchangeable. All pharmaceuticals within the same reference group have the same reimbursement price. It is also possible to give a premium reimbursement price if a drug has better effectiveness, a better safety profile or a better compliance rate than the reference product. The list of reference groups includes about 300 groups of pharmaceuticals based on therapeutic indications issued by the Ministry of Health.

The reimbursement price is set at the lowest EU price of a pharmaceutical within each reference group. Only if the lowest EU price is considered to be too low, the reimbursement price is set as the average of the two following lowest EU prices of the reference product.

The Act on Public Health Insurance (Act. No. 48/1997 Coll.) also specifies 195 clusters of pharmaceuticals within which at least one product should be fully reimbursed. In this case reimbursement price is not set based on the lowest EU price but according to the lowest Czech price. In general, the cheapest out of a defined group of pharmaceuticals is fully reimbursed, whereas the patient has to pay the difference to the reference price when purchasing other pharmaceuticals.

The reimbursement policy also allows to set a second reimbursement price for a specific group of patients or a specific indication, which is not covered by reimbursement of the reference product.

Source: SÚKL (2018_[28]), “Pricing and Reimbursement”.

Strengthening the financing of the health care system

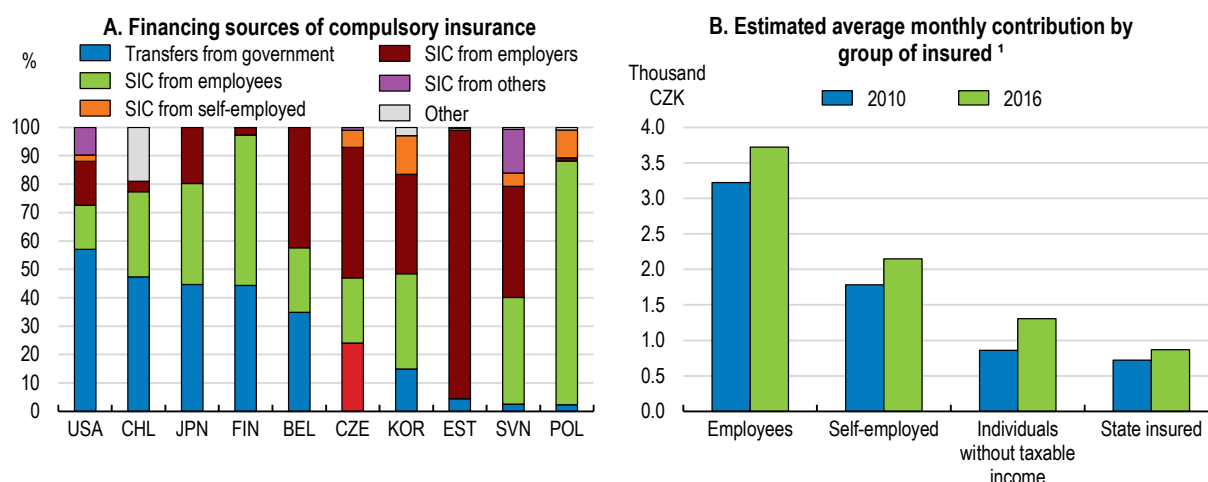
The main sources of revenue for the social insurance system are compulsory contributions that are levied on wages (Figure 24, Panel A). Employers and employees pay 13.5% of gross wages, split into 9% for the employer and 4.5% for the employee. Self-employed pay 13.5% based on 50% of their profits, but at least CZK 2 024 per month (EUR 80). The contribution is directly collected by the health insurance funds. For the economically inactive population, the state covers the contributions on their behalf (CZK 969 per month in 2018, EUR 38). The money for the economically inactive is paid by the Ministry of Finance to the Health Insurance funds. In 2016, 64.9% of the revenue of health insurance funds was coming from the employed, 6.6% from self-employed and the remaining 28.5% from state contributions (Úzis, 2017_[29]).

Capital investment in health facilities that are managed by the Ministry of Health or that fall under the responsibility of the regional authorities are channelled through a budget that is funded by general taxation. In addition, capital investment can be covered by EU structural and cohesion funds from the Integrated Operational Programme of the Czech Republic. In 2016, spending of state, regional and municipal budgets accounted for 6.3% of total health expenditure (Úzis, 2017_[29]).

The Ministry of Health also provides direct financing for public health services, covering some of the costs of training medical personnel, running a variety of specialised health services, air emergency services, conducting medical research, and providing postgraduate

education to physicians. The medical rescue service is subsidised by regional governments (Alexa et al., 2015^[13]).

Figure 24. Financing sources of health insurance



1. There are four different groups of contributors in the social insurance scheme. Average monthly contributions are estimated from information on total revenues of social insurance funds broken down by each group of contributors. Additional information used for the estimation covers the number of employed and self-employed, average wage, general assessment base and estimates of contributors among different groups. The estimates are intended to express full-time equivalents, however, especially in the case of the self-employed, the information base is not complete.

Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en; Czech social insurance funds and Czech Statistical Office.

To increase revenues and allow more spending on health care in the future, the tax base needs to be broadened. The health funding is based on the solidarity system which relies heavily on contributions paid by employers and employees, whereas the contributions of the self-employed and from the state are considerably lower (Figure 24, Panel B). Within the current contribution scheme, contributions by the self-employed could be increased gradually. In particular, the basis of self-employed contributions should be better defined to reflect their real contribution capacity (OECD, 2018^[30]).

The contribution from the state will not be sufficient in covering the cost of health care, although the set-up acts as an automatic stabiliser in times of an economic downturn. As such, the financial sustainability of the health care system is vulnerable to economic shocks and demographic change. The more people shift from employment to inactivity, the lower the total contributions to the health system. This financing of the system is therefore procyclical and following the financial crisis, the largest health insurance fund VZP ran up debt (Alexa et al., 2015^[13]). In addition to increasing state contributions, alternative solutions to rebalance revenues are needed, addressing both the cyclicity and diminishing revenues from economically active people due to population ageing. Government contributions should be linked more tightly to health spending to cover economically inactive people.

To cover public expenditure of the health care system, revenues from general taxation for the health care sector should be broadened. One way is to set a contribution rates on all kind of revenues (capital and property income for instance), not only on wages, and therefore ensure that all revenues are contributing to health. In addition, taxes with potential

behavioural effects that reduce the need for spending on health care and add to overall revenues could be introduced or increased. As discussed below, higher taxes on tobacco and alcohol may not only raise revenue, but also create incentives for consumers to reduce consumption and thereby related health problems.

Increasing and broadening co-payments can promote cost-efficient consumption of health care. For services that are not covered by insurance, the patient has to pay the expenses directly to the service provider. The main cost for patients is related to pharmaceuticals and medical goods (8.8%) and for providers of ambulatory health care (4.9%) (OECD, 2018^[25]). While out-of-pocket payments as a share of final household consumption remain low if compared with countries with a similar institutional setting (Korea: 5.1%, Greece: 4.9%) and the OECD average of about 3%, out-of-pocket payments have been slowly increasing over the years reaching 2.4% of final household consumption in 2015 (Figure 25, Panel A). Out-of-pocket payments could be broadened but reduced for pharmaceuticals and dental care.

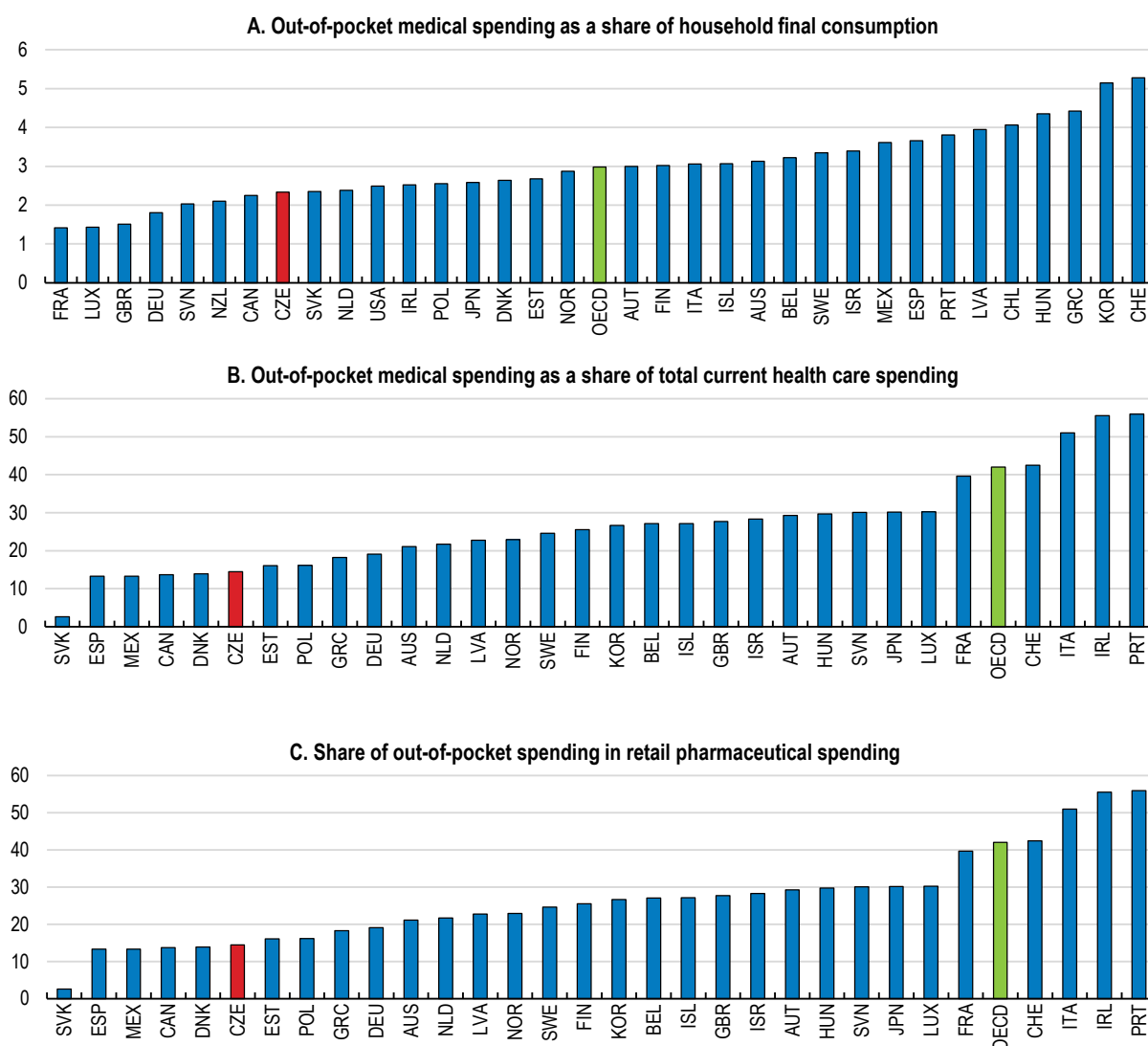
To reduce the number of consultations and increase private participation in health funding, a system of user fees was introduced in 2008. A physician visit with clinical examination cost CZK 30 (around EUR 1.10); every item on a drug prescription CZK 30; and CZK 60 for each day of inpatient care and CZK 90 for emergency services. The introduction of user fees was highly criticised and in 2011 the prescription fee was altered to CZK 30 (EUR 1.10) per prescription (not per item on the prescription) and the fee per inpatient day was increased from CZK 60 (EUR 2.20) to CZK 100 (EUR 3.65). Despite a lack of empirical evidence, in July 2013 the Constitutional Court decided that this increase was unfair to vulnerable groups and the fee was abolished. The government abolished all remaining fees in January 2015, except the fees for emergency services.

Co-payments for pharmaceuticals, dental care and health tools and aids are, however, still in place (Figure 25, Panel C). For pharmaceuticals, most of the prescribed drugs in outpatient care are only partially covered by public health insurance, with the patient having to cover the rest.

The impact of user fees and co-payments on health care consumption is a disputed issue since the Rand Health Insurance experiment (Manning et al., 1987^[31]). The randomised experiment was initiated by the US federal government in 1974 to evaluate the effect of user-fees on health care consumptions. Based on this experience, Manning et al. (1987^[31]) found that higher patient payments significantly reduced medical care utilisation, without any effect on health outcomes on average. This result was confirmed by Chandra et al. (2010^[32]) for elderly persons in the US but with compensation effects on inpatient care, in particular among the most vulnerable groups. In France (Chiappori, Durand and Geoffard, 1998^[33]) and in South Korea (Kim, Ko and Yang, 2005^[34]), user charges were not found to reduce health care consumption. Research in Germany, Japan and other countries found mixed results of higher user charges on health care or drug consumption.

Figure 25. Out-of-pocket medical spending is low

Percentages, 2015 or nearest available



Note: Indicators shown relate to current health spending excluding long-term care (health) expenditure.
Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris.
http://dx.doi.org/10.1787/health_glance-2017-en.

In the Czech Republic, results are also mixed. While Hromádková and Zdeněk (2013^[35]) find that user fees had some (although limited) effects on drug demand, Zápál (2010^[36]) do not find a response. Žilová and Votápková (2012^[37]) find that the effect of the abolition of user charges on the number of doctor visits is insignificant. An often used argument against user fees was the potential deterrence of lower-income populations at the margin in requesting health care (International Organisation of Migration, 2016^[7]).

The lessons from the empirical and theoretical studies of the effects of co-payments on health care consumption are thus mixed. First, country-specific institutional features (basic coverage, complementary insurance, private sector role, pricing policy, etc.) matter for the design of the scheme. Besides other effects, it influences public perceptions and acceptance

of the scheme, which has become one of the main lessons from the Czech experience. Second, to be effective, co-payments must not be too low or too high. Regarding the above empirical studies, the Czech case seems to have suffered from user fees that were too low (especially in the case of the CZK 30 fees for a doctor's visit). It did not affect much the patients' behaviour, but brought an extra administrative burden for doctors. Finally, to minimise eviction effects on inpatient care, vulnerable groups (low income, chronic diseases) should be exempted or the annual amount of co-payments capped.

There is room for reintroducing a better designed system of co-payments in the Czech Republic. The biggest challenge is currently with respect to public perceptions and political sensitivity. Any change must be accompanied with profound informational campaign. The size of fees should be evaluated to ensure a positive pay-off taking into account the administrative burden. One way could be to exclude GPs and introduce co-payments for visits to specialists and hospital visits without referral, which would also strengthen their gate-keeping role.

The role of the health insurance funds

Health insurance funds have little room to compete with each other in terms of services and prices. The services that are covered by health insurance companies are anchored in the Act on Public Health Insurance, which defines a broad benefit package. Providing additional services is often not viable as there is no price competition for attracting or incentivising the insured person to move to another fund. As discussed above, the reimbursement of health care services is based on contracts between providers and health insurance funds, so that there is no direct channel to provide financial incentives to the end consumer of health care to avoid unnecessary demand or encourage a healthier lifestyle. However, setting up a system that allows insurers to negotiate more effectively the fees with the service providers that are for example linked to their performance can provide room for competition on quality. Further, creating flexibility in the system to allow for contractual policies between insurance funds and individuals could be used to support preventive care and healthy behaviour. For example, lower fees for people who participate in preventive exercise and medical screening programmes could create incentive to adjust towards a healthy lifestyle.

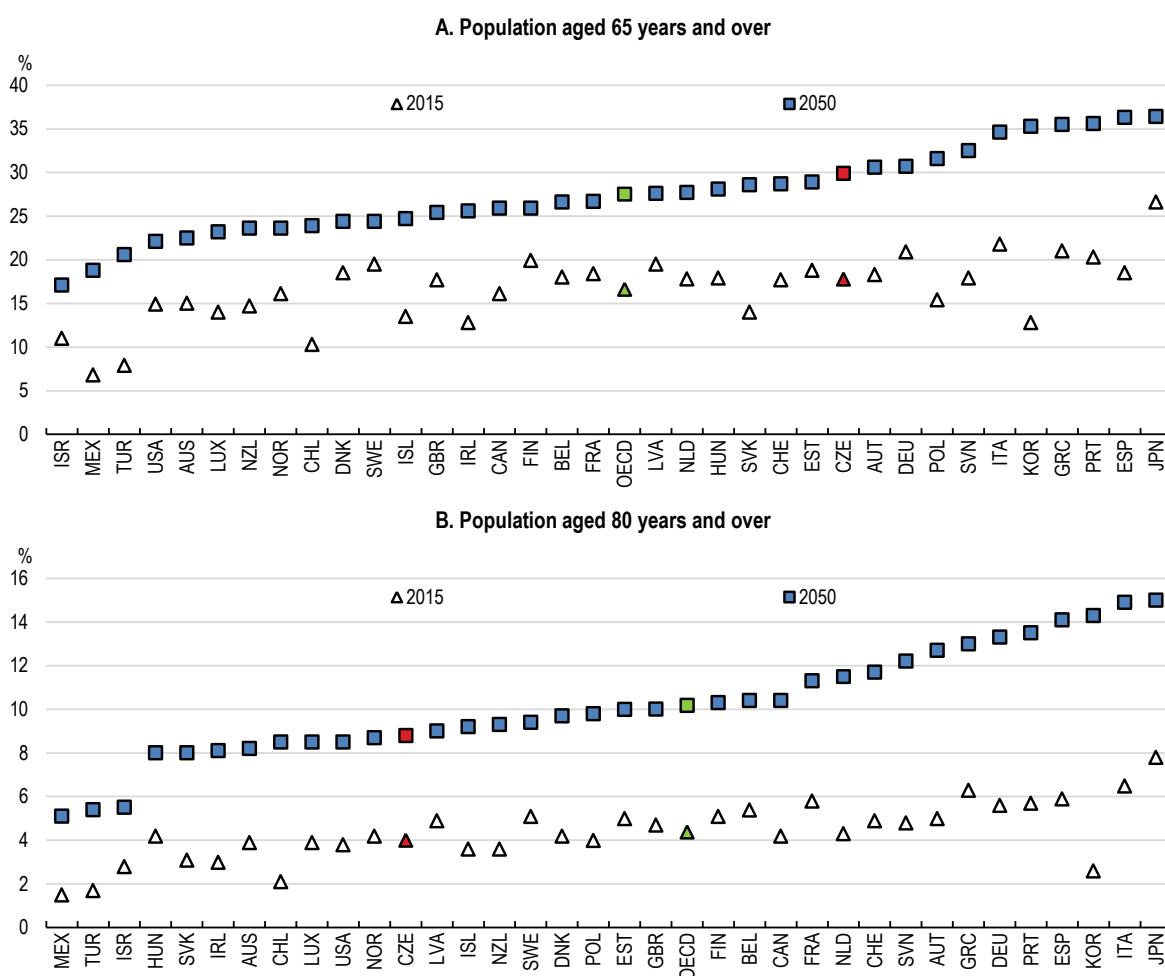
The risk-adjustment redistribution scheme was reformed and enacted in January 2018, opening the possibility for improving the quality of care for chronic patients. The switch from a risk-adjustment scheme based solely on gender and age towards a more sophisticated PCG system avoids the selection of good risks of health insurance funds (see Box 1). Moreover, the current system is more beneficial towards health insurance funds that have more patients with chronic diseases. Encouraging health insurance companies to attract chronic patients may ultimately lead to a better quality of care. For example, health insurance companies could set up a specialised network by focussing on contracting relevant health providers and by optimising patients' pathways and treatment methods.

Greater competition in the health insurance market could improve the quality of care (Porter and Teisberg, 2004^[38]; Gaynor, 2006^[39]). While managing the reimbursement claims, the health insurance funds already monitor service providers' activity within their network. Collecting additional information about the quality of care and allowing insurance funds adjust reimbursement accordingly could benefit the overall quality of health care (OECD, 2014^[15]).

Ageing will account for roughly half of the future rise in health care spending

The population is ageing rapidly. The share of people aged 65 years and above will reach almost 30% by 2050 (Figure 26). Although the impact of ageing on health spending is uncertain, recent estimates show an upward pressure on public health care expenditure in the next four decades. Under the assumption of no policy change and disregarding the non-demographic factors, public expenditure on health care is set to rise from 6.2% in 2016 to 8.2% of GDP around 2060 just because of ageing (Figure 29).

Figure 26. The population is ageing rapidly



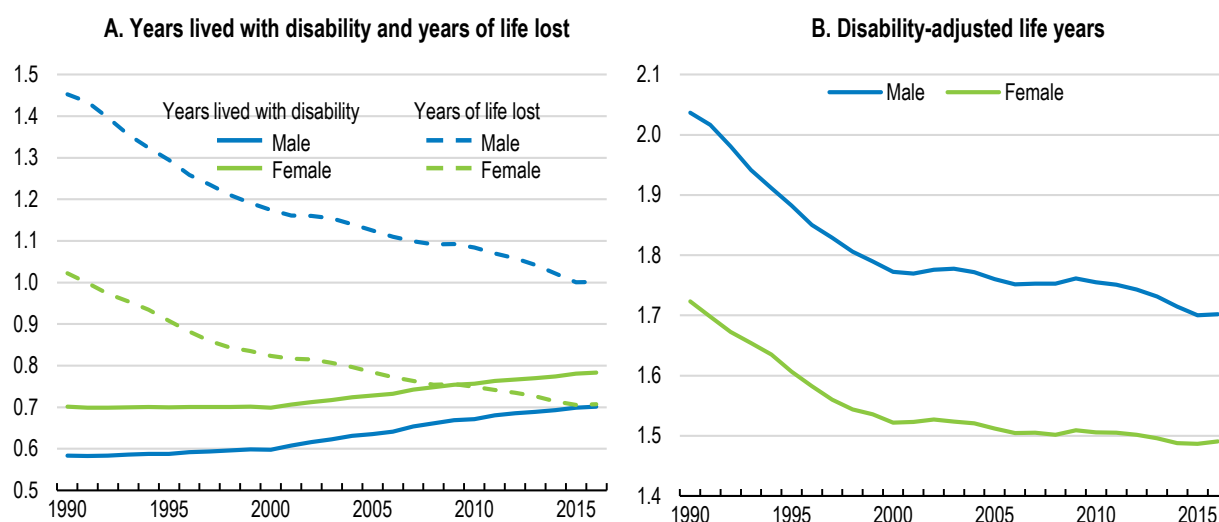
Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris.
http://dx.doi.org/10.1787/health_glance-2017-en.

This demographic scenario takes into account death-related costs and assumes that gains in life expectancy are mostly spent in good health. This assumption is extrapolating past trends. For example, disability-adjusted life years (DALY), the sum for the whole population of the number of years that were lost due to any disease or injury, have been decreasing during the last quarter century (Figure 27, Panel A and B). Although the trend is still decreasing, the pace has slowed down after 2000 because of rising years lived with disability (Figure 27, Panel A). The growth of years lived with disability is driven mainly

by low back and neck pain, sensory organ diseases, diabetes mellitus, cardiovascular diseases and injuries.

Figure 27. Disability-adjusted life years and its components

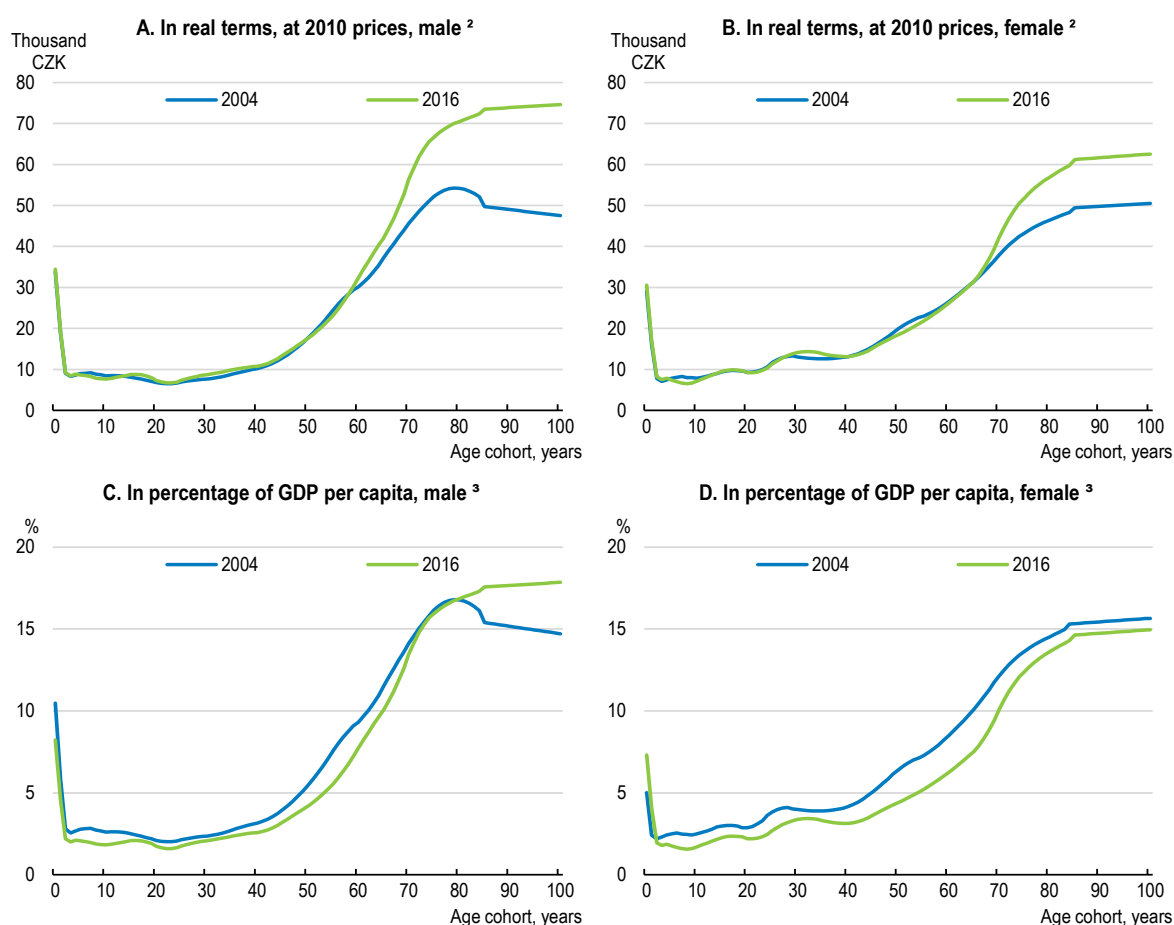
Millions of years (sums for the population)



Source: Institute for Health Metrics and Evaluation (IHME), Global Health Data Exchange.

Ageing will also change the average cost profile due to increasing life expectancy, which shows how much is spent on average for patients by their age (Figure 28). The absolute numbers demonstrate mainly increases in levels for older age cohorts, which is in line with the changing age composition. In terms of share to GDP per capita (Figure 28, Panel B), the cost profiles have a tendency to be shifted to the right, which reflects the healthy ageing of the population.

The uncertainty about future cost profiles is large. The evidence base is well developed for age profiles up to 70 years, but sufficient information beyond this threshold is lacking. One of the main questions is whether the increasing life expectancy will be accompanied by more years spent in good health or not. There are two extreme scenarios (Figure 29): Compression of morbidity assumes that all gains in life expectancy are spent in good health, whereas expansion of morbidity counts all into bad health. The effect of ageing can be mitigated by preventive and screening programs.

Figure 28. Evolution of health care cost profile over population age cohortsHealth care cost per capita profiles ¹

1. The cost profiles for health care expenditure express how much on average it is paid for an insured by age. If the shape of the profile remains unchanged over time, but population is ageing (i.e. there are more people in the right part of the graph), it means more overall costs. The assumption of healthy ageing implies the profile shifts to the right. At the same time, health care expenditure can rise by other reasons than demographic, which would cause a shift in levels upwards.

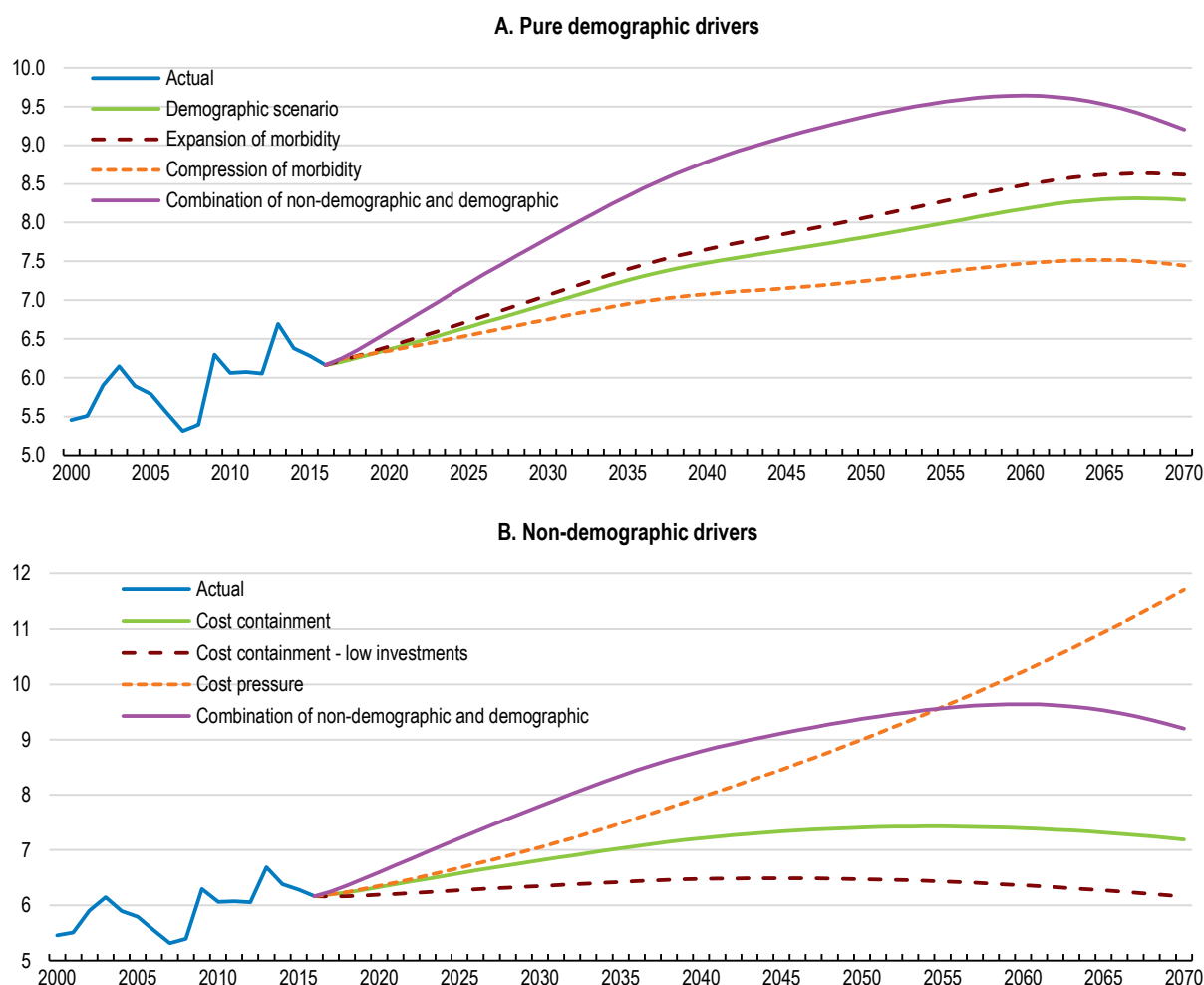
2. Deflated by GDP deflator.

3. In order to separate the income effect, this picture shows the profiles as ratios to GDP per capita. It depicts what would be the ratio of health care expenditure to GDP if the whole population was from a given age cohort. *Source:* Calculations based on data from OECD (2017), System of Health Accounts (database), Czech Statistical Office and Eurostat.

However, the demographic factors explain only a small part of the future development of health care spending. In line with recent research (de la Maisonneuve and Oliveira Martins, 2013^[40]; Medeiros and Schwierz, 2013^[41]), the major drivers of health care expenditure are the non-demographic factors such as technological and institutional improvements (Figure 29, Panel B). The “cost pressure” scenario assumes that non-demographic factors have a large effect on health care expenditure, while the “cost containment” scenario implies that the impact of non-demographic factors diminishes over the projection horizon. In upcoming decades, however, these factors are likely to have an increasing impact on health care financing, as the Czech Republic still follows a convergence path in technologies and health care standards towards the more advanced economies.

Figure 29. Public health care expenditure projections

Per cent of GDP



Note: These scenarios should not be interpreted as predictions of future developments. The projections illustrate future dynamics under certain assumptions in various scenarios. It does not anticipate future policy changes. The starting point is at 6.2% of GDP, which is the current share of public health care expenditure including long-term health care. In projections of the European Commission (2018), long-term care is not included in the health care projections, but is projected separately (together with social long-term care).

Source: Calculations based on data from OECD (2017), System of Health Accounts (database) and European Commission (2018), Population projections by the Ageing Working Group by Eurostat.

The current financing of the health system is particularly vulnerable to the impact of ageing. The contribution of the state on behalf of retirees and old-aged inactive people will have to increase considerably. But as the contribution of the state for inactive people is low compared to workers' contributions, it will weaken the financing of the system. The heavy reliance on public financing is therefore a weakness that will not be sustainable in the context of an ageing society.

It is therefore necessary to broaden the financing of the health system. A contribution of retirees and old-aged people could be put in place. One of the obstacles is the relative low

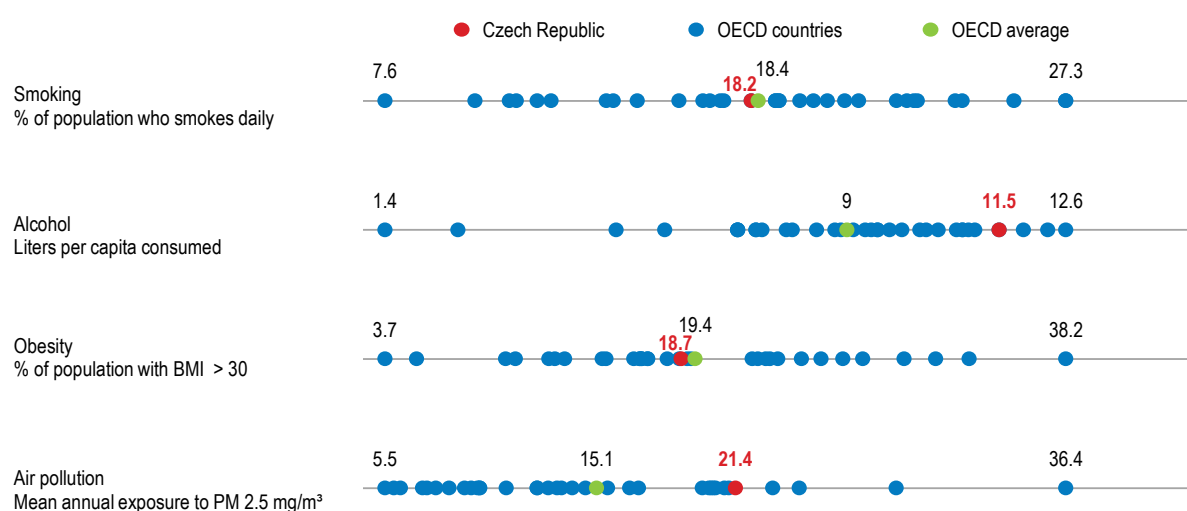
level of pensions and also their heavy reliance on the public pension scheme. However, pensioners with revenues above the average wage could contribute at a rate equal to the employee's contribution rate (4.5%).

Promoting healthy lifestyle choices and preventive policies

To maintain and improve health outcomes, the authorities need to promote a healthier lifestyle. Exposure to environmental risk as well as risky behaviour such as smoking, alcohol consumption and the prevalence of obesity are close or above the OECD average (Figure 30).

Estimates suggest that reducing risky behaviour in terms of smoking, alcohol consumption, diet and obesity to healthy levels could lead to an increase in life expectancy by almost 3.5 years in the Czech Republic (European Commission, 2015^[42]). The effect on healthy life expectancy would be even higher and highlights the potential for economic benefits through employment and productivity. Not only could the promotion of healthier lifestyles increase health outcomes, but also reduce health inequalities as behavioural risk factors are correlated with socio-economic characteristics. Thus, people with the lowest level of education were three times more likely to report having diabetes and more likely to be daily smokers (19.9% compared to 9.1%) (Eurostat, 2017^[43]).

Figure 30. Snapshot of risk factors to health



Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

Alcohol consumption remains high affecting premature morbidity. Over the last three decades, it has followed a slight upward trend reaching about 11.5 litres per capita in 2015 – compared with an OECD average of 9 litres per capita (OECD, 2017^[2]). Further, the rate of heavy episodic drinking is among the highest in the OECD (Sassi, 2015^[44]). In 2012, about 5.8% of all premature deaths in the Czech Republic were attributed to alcohol (World Health Organisation, 2014^[45]).

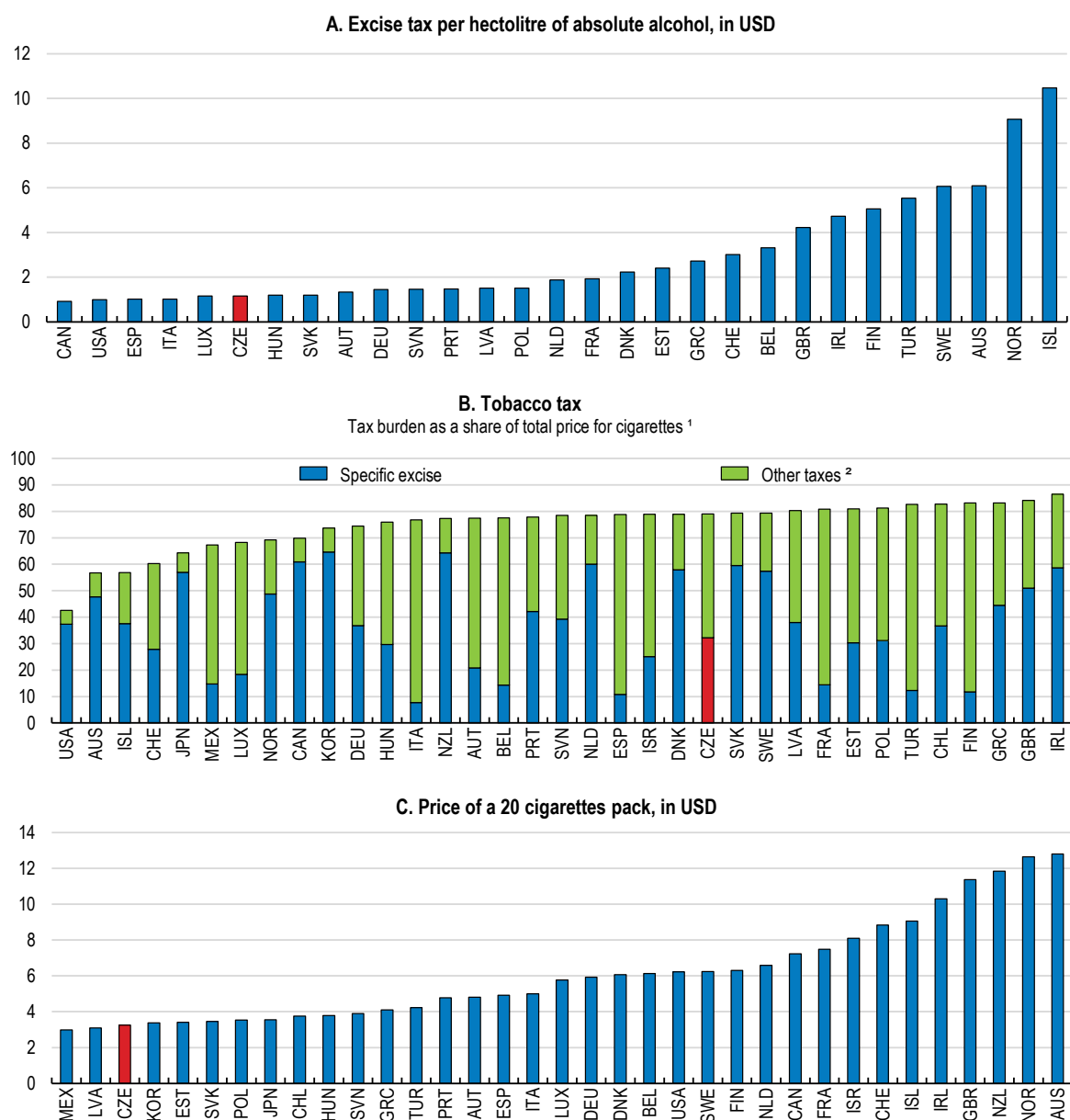
Between 2004 and 2010 a temporary decline in alcohol consumption was visible, likely resulting from an increase in excise duty on alcohol relating to the Czech membership in the EU and tax harmonisation. In 2009, excise taxes on alcohol were increased again. In May 2017, a new law came into force to reduce the harm caused by alcohol focussing on

increasing public awareness. It was, however, not accompanied by regulatory measures such as reducing the availability and affordability of alcoholic beverages (Hnilicová et al., 2017^[46]). For example, wine has zero excise taxes and introducing higher taxes on alcohol are politically sensitive and alcohol prices are among the lowest in the EU (Sassi, 2015^[44]; OECD, 2016^[47]).

The authorities' efforts to reduce tobacco consumption have shown first effects, as the share of daily smokers is now just below the OECD average. The government's action plan for tobacco control for the period 2015-2018 envisaged a reduction in the consumption of tobacco products by 8% until 2018, as well as the reduction of the population's exposure to environmental tobacco smoke. As one of the last European countries, the Czech Republic has approved an extended smoking ban for indoor areas such as restaurants, pubs, bars and certain outside areas (around public transport stations) which came into force in May 2017. In addition, the share of daily smokers decreased over the last years, following successive price increases after the Czech accession to the EU. Thus, excise taxes for tobacco have successively increased to soften price jumps that were needed to meet the minimum taxation by 2014 to align with EU legislation. Still, the cost of cigarettes remains low in international comparison (Figure 31).

Policy measures targeted to reduce alcohol and tobacco consumption should follow an integrated approach that extends beyond price incentives. While price increases due to higher taxation reduced the share of the smoking population, alcohol consumption seems to be more price-inelastic. Additional measures to reduce alcohol consumption could therefore include the banning of advertisement, restricting places of sales as well as strengthening preventive programmes targeted at vulnerable population, which tend to consume more alcohol (Sassi, 2015^[44]). In addition, policy action tackling drunk driving could be implemented through higher police presence on the streets that carry out random alcohol test.

In addition, increasing prices of sugary and high-caloric food items through appropriate tax levies could promote healthier diets as the consumption of these products seems to have a high price elasticity (Sassi, 2016^[48]; Sassi, Belloni and Capobianco, 2013^[49]). Specific taxation for high-calorie products that are for example high in saturated fats, trans-fatty acids or sugar could be introduced as was for example done in Hungary, Finland, France and Mexico. Studies for Mexico show that taxation of sweetened beverages was correlated with a decrease in consumption when a healthier untaxed alternative was provided (Marron, Gearing and Iselin, 2015^[50]; Sassi, Belloni and Capobianco, 2013^[49]; Sassi, 2016^[48]) (Box 5). Such a tax should be further complemented by additional measures to promote healthier lifestyles and ultimately reduced the incidence of obesity.

Figure 31. Excise taxes on alcohol and tobacco in the Czech Republic are low

1. Per cent of retail selling price (RSP) for a pack of 20 cigarettes. The RSP is defined as the weighted average price (WAP) i.e. the average consumer price of a tobacco product based on the prices of individual brands and weighted by sales of each brand in the country. Where the WAP is not available, the RSP is defined as the average price of the most sold brand of cigarettes on the market.

2. Include excise on value, value added tax or goods and services tax.

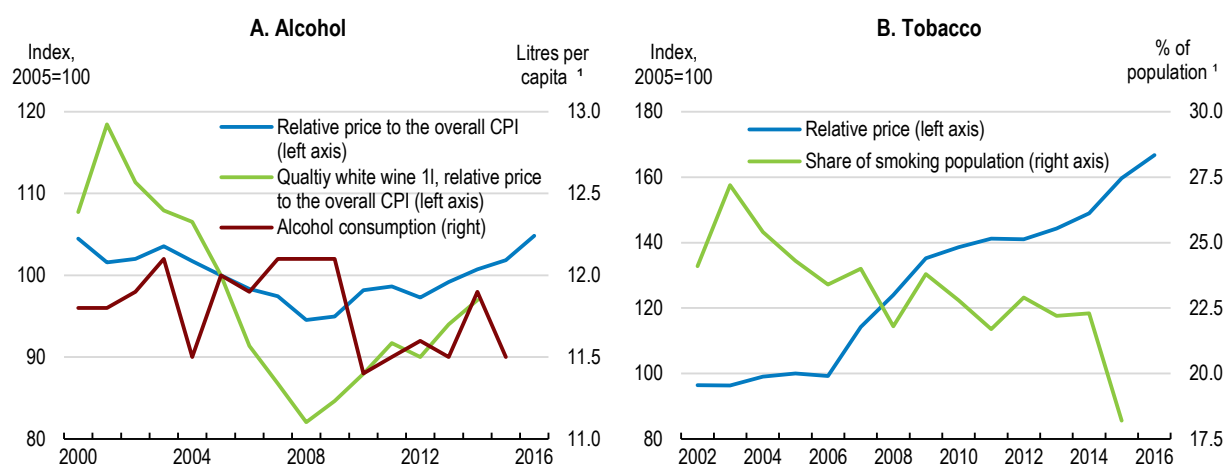
Source: OECD (2016), Consumption Tax Trends 2016.

As in many OECD countries, raising obesity rates in the Czech Republic give reasons for concern. Since 2000, the share of the obese population increased from 14% to about 21%. As obesity is linked to the prevalence of diabetes and chronic diseases, not only negative health outcomes but also increases in related health costs are likely (OECD, 2010^[51]). Early school-based prevention programmes to promote a healthy lifestyle can reduce the

prevalence of diabetes, whereas early control, counselling and quality management in the primary care sector can avoid high costs due to chronic complications that are common for diabetes when left untreated or poorly controlled (OECD, 2014^[15]).

In the Czech Republic, despite aggregate decreases in the potential life years lost per 100 000 population, premature mortality relating to the cause of diabetes mellitus has not shown any advancements over the last 10 years showing room to improve treatment management (OECD, 2018^[4]). General practitioners should be incentivised to take on a greater role in prevention and chronic disease management as a fundamental part of their role as primary care provider. For example, they could act as main co-ordinator between primary and specialist care, while also supporting the patient through patient education and strengthening self-management practices (OECD, 2014^[15]).

Figure 32. Alcohol and tobacco consumption and their price developments



1. Refer to the population aged 15 and more.

Source: Czech Statistical Office and OECD (2017), Health Statistics (database).

Measures to prevent diabetes should be scaled up. A National Diabetes Programme was initiated in 2012 with a strong focus on reducing the risk factors such as obesity, low physical activity, overeating and improper diet. Thus, educational programmes such as “Healthy School” or “Healthy Workplace” promote healthy lifestyle choices. In 2016, the control of food sales in elementary schools was introduced, banning products that contain sweeteners, trans-fatty acids or caffeine and excluding tea. Further measures to tackle obesity could include compulsory food labelling, the regulation of food advertising to children and mass media campaigns (Sassi, 2009^[52]). Although these have been suggested as part of the National Diabetes Programme and are in line with the Health 2020 strategy, they have not yet been implemented.

Box 5. Taxes on sweetened beverages across OECD

In many countries, health policies started to address the impact of sweetened beverages and unhealthy food on health, in particular, obesity and diabetes (WHO, 2015). Increasing taxes on sugar is the main tool used in many countries. In the OECD - although other high-sugar products such as confectionary, ice cream and chocolate are often taxed as well - most commonly, taxes have been imposed on sweetened beverages:

- **Finland** currently taxes sugar-sweetened, artificially-sweetened and non-sweetened beverages, including energy drinks, mineral waters and juices. These taxes (EUR 0.22/L) are primarily intended to generate revenue, although the potential positive health impacts are acknowledged, especially for younger people. A lower tax rate (EUR 0.11/L) is applied to beverages with less than 0.5 g of sugar per 100g of product.
- **France** introduced taxes on all beverages with added sugar and sweetener in 2012 with a flat rate of EUR 7.53 per hectolitre. In 2017, the tax scheme was amended and now beverages with less than 5 g of sugar per 100 ml are exempted and for drinks with 5 to 8 g of sugar per 100 ml the tax rate of EUR 7.53 per hectolitre applies. Beverages with a sugar content of 8 to 10 g per 100 ml are taxed the double, and beverages with more than 10 g of sugar per 100 ml are taxed the triple of that rate.
- **Hungary** taxes sugar-sweetened beverages (at EUR 0.63/litre). The taxes were introduced in 2011 to improve public health. They were also seen as part of a pro-growth tax shift towards consumption. The taxes have resulted in decreases in consumption of sugary soft drinks by about 20% in 2016.
- **Mexico** introduced an ad quantum tax on sugar-sweetened beverages in 2014 amounting to 1 Peso per litre. Artificially sweetened beverages are not taxed. Annual sales of sodas declined by 6% in 2014 after the introduction of the soda tax.
- **Norway** taxes both sugar-sweetened and artificially-sweetened beverages. These taxes were all originally introduced to raise revenue but their continued use now also has a health rationale. In the beginning of 2018, the sugar tax per litre was increased from 2.81 up to 4.75 kroner.
- **Belgium** implemented a tax on sugar-sweetened, artificially-sweetened and non-sweetened beverages. The introduction of the tax is part of a broader tax reform policy to shift some of the tax burden away from labour income and largely towards consumption that generates negative externalities.
- **United Kingdom** introduced a tax of GBP 0.18 per litre on beverages with more than 5 g of sugar per 100 ml of product. A higher rate (GBP 0.24 per litre) is imposed on drinks with more than 8 g of sugar per 100 ml of product. The tax does not apply to fruit juices or milk-based products, and smaller producers are exempted from the tax. In response to the announced tax introduction, several producers have reacted and reduced the sugar content of sweetened beverages to below 5 g per 100 ml of product.

Source: OECD (2016), Health-related taxes on food and non-alcoholic beverages in OECD countries: Key design issues; WHO (2015), "Using price policies to promote healthier diets", World Health Organization

Improving health literacy

Preventive programmes are crucial to reduce avoidable health care cost. In the Czech Republic, preventive programmes focus on immunisation programmes and medical screening to detect diseases early. However, early intervention and preventive programmes regarding risky lifestyle choices are not widespread, despite the close link to chronic diseases. For example, an OECD study based on estimates for 2010 suggests that alcohol preventive programmes could significantly reduce deaths from chronic diseases and injuries. A programme of brief interventions by primary care physicians, aimed at people drinking too much is estimated to lead to a total annual gain of 26 000 years of life in good health. Cost-benefit estimations show that prevention has the potential to cut health expenditures for chronic diseases and injuries by up to USD PPPs 73 million per year in the Czech Republic (Sassi, 2015^[44]).

Preventive programmes rarely extend beyond pre- and elementary school interventions. Accompanying the implementation of the Health 2020 strategy, the Ministry of Health, together with the Ministry of Education co-operated to ensure that 50% of pre-school children and 95% of elementary school children have access to institutions that support the health consciousness programmes (Alexa et al., 2015^[13]). These efforts could be extended to incorporate healthy behaviour. For example, the school setting could be used to provide nutritious school meals and restrict the availability of unhealthy foods and beverages also beyond elementary school. Furthermore, inequalities in health outcomes could be reduced by education through addressing specific health topics such as injuries, mental health, sexually transmitted infections, violence, pregnancy and substance use.

Health education and access to information should be available for all citizens to make sound health decisions. Despite scarce data, a first survey conducted on health literacy in the Czech Republic showed that about 60% of the respondents showed deficits in general health literacy (Kučera, Pelikan and Šteflová, 2016^[53]). Moreover, the study found that health literacy is correlated negatively with age and positively with education and that health literacy has a considerable influence on healthy behaviour and thus on health status.

Providing better access to health information for the general public in addition to health education and prevention programmes in schools can serve as means to create more equal health outcomes. In addition to basic information regarding health in daily life and risk factors, in case of needed medical intervention, information on potential treatments, the quality of health care providers and facilities should be easily accessible.

Although there have been attempts to improve the information on the performance of health care facilities to the public, coverage tends to be low and of limited value for patients to make informed choices. For example, the Czech Society of General Practice, the Health Care Institute and the Ministry of Health conduct different surveys to collect data based on patient perspectives and experiences. The fragmented nature of data collection poses a challenge to achieve a coherent and robust analysis of patient satisfaction and the evaluation of provider and system performance due to differences in survey design and coverage. A better co-ordination of survey design and the provision of the data at one central location – as is for example the case in the UK (Box 6) - could support patients to find relevant information.

Box 6. Making patients experience data available to the public: examples from across the OECD

In the United Kingdom (England), patient experience data are presented at the Department of Health websites and NHS choices. A sub-set of data from various national survey programmes and a GP survey programme is presented on the main website to help patients compare services and choose between them. Further, care directory scores on different aspects of health care rated by patients allow the public to easily search for a hospital, care home, dentist and/or local service.

Germany has a specific website, and results of surveys conducted by hospitals and physician offices are published via Quality Reports and available to the public for benchmarking. Also the Netherlands makes patient experience data available to facilitate public choice. In Flanders in Belgium, many hospitals report their own data on their website, and since 2015 a central website hosted by the Flemish government, provides the data of the hospitals that are willing to publish these data. More recently, since the end of 2016, France has provided patient satisfaction survey (eSATIS) data available on the website along with accreditation results.

Public reporting of patients experience data is also common in the Nordic countries. In Sweden, comparative data on patient experiences in primary care units across county councils are published online. Results of telephone interviews assessing people's attitudes, knowledge and expectations about the Swedish health care system are also available and comparative data across county councils and regions are published, allowing the public to use these results to choose their primary health-care unit. The Swedish Association of Local Authorities and Regions presents the national data on a website where comparisons with other units or hospitals in other county councils are possible. In Denmark, since 2009, survey results for somatic inpatient and outpatient care are available to the public on the homepages and in Norway, provider-level data are available online to facilitate consumer choice.

Source: Klazinga and Fujisawa (2017^[54]), "Measuring patient experiences (PREMS): Progress made by the OECD and its member countries between 2006 and 2016", OECD Health Working Papers, No. 102, OECD Publishing, Paris. <http://dx.doi.org/10.1787/893a07d2-en>

Box 7. Recommendations to improve the Czech health care system

Key recommendations

- Gradually introduce a pay-for-performance scheme for hospitals and doctors based on a broad set of performance indicators.
- Reduce the scope of the reimbursement decree by limiting its coverage and leaving the rest to negotiations between insurance funds and health providers.
- Continue reducing hospital beds by encouraging regions and local bodies to restructure capacities of health services and facilities.
- Strengthen the role of primary care through gate-keeping and further shift towards a better mix of capitation fees and fee-for-service for GPs.
- Increase the capacity of medical faculties and the number of students through scholarships and ensure the sustainable financing of universities.
- Increase taxes on tobacco, alcohol and consider introducing taxes on unhealthy food and beverages.
- Promote a healthier lifestyle and further develop disease prevention and screening programmes.
- Align payment schemes for long-term care in health and social care setting by co-ordinating the use of user fees.

Reform the governance and organisation of the health care system.

- Use the new DRG system for setting the reimbursement prices of health services to reap efficiency gains and reform or close underperforming hospitals.
- Develop e-health through subsidising the equipment of health providers, training of users and guaranteeing the security of information and their appropriate use.

Improve care delivery and develop preventive policies

- Further shift from inpatient care to outpatient care by developing day care through more day surgery and minimal invasive treatments.
- Entrust general practitioners to co-ordinate treatment and preventive measures in primary care and give them a gate-keeping role to improve the efficiency of care management.
- Introduce intelligent cost sharing to limit consultations and increase awareness of health costs. For instance, co-payments could be introduced for people bypassing the referral system, some hospital treatments and some specific consultations.
- Evaluate and increase if necessary the subsidy and reimbursement bonus plan designed to incentivise doctors to settle in remote areas.
- Improve the education and career opportunities for medical staff and nursing by offering more autonomy and responsibilities along the career.

Reform the financing of health care

- Gradually increase contributions from the self-employed to better reflect their contribution capacity.
- Broaden revenues from general taxation for the health care sector by setting a contribution on all kinds of revenues.

Prepare long-term care for ageing

- Incentivise regional authorities to ensure that enough long-term care institutions exist within their borders.
- Provide social care allowance taking into account individual's income to guarantee that individuals can afford access to institutional care.

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