

# Healthcare spending review II

## Final report

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The responsibility for mistakes and omissions lies with the authors.

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## Introduction and summary

*Spending review is part of the government project Value for Money which aims to reform rules, optimise processes and empower institutions to support good decision-making in the public interest and significantly increase the value for money ratio in the Slovak public sector.*

*The fourth year of spending review evaluates expenses with an impact on social integration of groups at risk of poverty and social exclusion, expenses on employment and remuneration in public administration, expenses on agriculture and public expenses on healthcare. Interim reports identify areas with the biggest room for improvement of effectiveness. Final reports then determine policy measures and an action plan for their implementation.*

*Spending review evaluates the majority of public expenses during a term of office. The proposed policy measures facilitate fiscal savings, better public services for citizens and/or reallocation of funds to the government's priorities. The review brings forward sustainable measures.*

*In developed countries, a spending review is a standard tool which helps governments find room for a more efficient use of public funds in public policies as well as for savings necessary in order to fulfil national and European fiscal obligations.*

*Healthcare is the second largest expenditure area in Slovak public finance after retirement pensions and it has a huge potential to improve the health and overall quality of life of citizens.*

*The first healthcare spending review in 2016 identified potential savings of 363 million euros, of which the government pledged to save 196 million euros per year by 2019.*

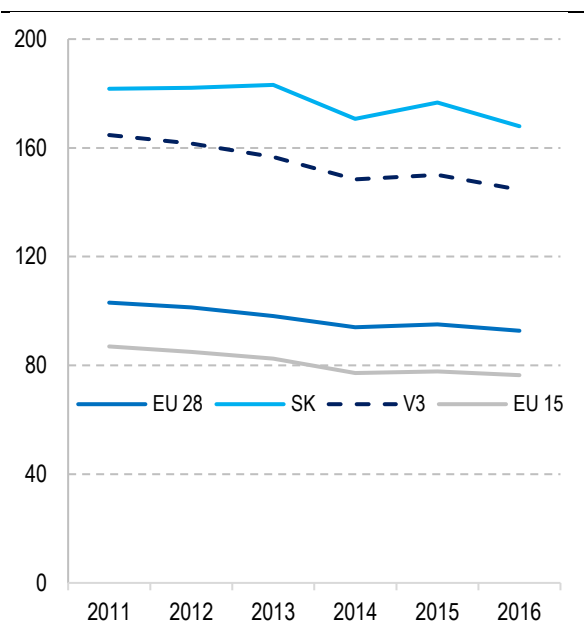
*Despite positive development in the recent years, there is still room for improvement of patients' health by increasing allocation efficiency. The government of the Slovak Republic thus mandated the Ministry of Finance and Ministry of Health to carry out a second healthcare spending review in the same term of office. On the one hand, the spending review identifies possible savings in areas where funds are not used efficiently, on the other hand, it determines the areas to which to reallocate the saved funds.*

**Healthcare must be the priority of Slovak public administration due to its potential to improve well-being of citizens, as well as due to the scale of the sector and its poor outcomes.** Developed countries invest in healthcare at a higher rate than their economies grow. Slovak healthcare expenditure is the second largest item in public spending, but its results are far behind comparable countries.

**Public healthcare expenditure is increasing and corresponds to the financial capacities.** In 2020, the expenses will reach 5.6 billion euros. In the last 10 years, they have increased by 44%, while GDP by 40%. Slovak public healthcare expenditure equals 5.7% GDP, which is more than the average in V3 countries (5.1%) and less than the average in EU15 countries (7.2%).

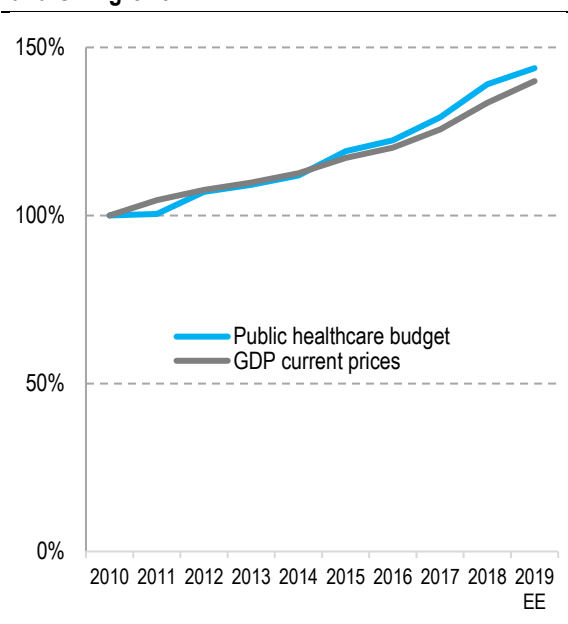
**However, the outcomes of Slovak healthcare do not correspond to the expenses.** Treatable mortality rate in Slovakia is 168 deaths per 100 thousand citizens which could have been avoided by early and effective healthcare. The annual rate in other V4 countries is 145 deaths per 100 thousand citizens. Life expectancy and other outcome indicators lag behind in a similar fashion. The government of the Slovak Republic pledged to reduce the number of treatable causes of death to the V3 level by 2025.

**Treatable mortality (per 100,000 citizens)**



Source: Eurostat

**Comparison of the increase in healthcare expenses and GDP growth**



\* EE – expected expenditure

Source: Eurostat, General Government Budget of the Slovak Republic

**The focus on results and funding stability in healthcare will be supported by implementation of programme-based budgeting in public health insurance and a change of budgeting system for healthcare expenses.** From 2020, public health insurance expenses will be divided into specific objective categories, which is a standard in OECD countries. Funding stability will be ensured by determining overall public healthcare expenses. The annual sum of insurance premium paid by the state from January 1, 2020 will be set by the Law on State Budget and will no longer depend on average salary. The change in funding will allow to better determine the necessary healthcare expenses because instead of using an arbitrary percentage for state-insured people, which causes a volatility of the overall expenses, it opens up a discussion about the actual needs of the sector and reduces the link to economic cycle.

**Lower value for money in Slovak healthcare is caused by inefficient allocation of resources.** Compared to other countries, Slovakia has high expenses on pharmaceuticals, diagnostics and specialist examinations caused by excessive number of doctor visits. These are the main categories of expenses with room for improvement. By contrast, primary care, long-term care, prevention and mental health promotion are underfunded. **The potential of cost-saving policy measures identified in the review is 542 million euros per year.** The measures cannot be fulfilled immediately, they need gradual implementation, some of them as many as 10 years. Upon agreement between the Ministry of Finance and Ministry of Health, it is possible to save 148 million euros in 2020 without negative impact on the outcomes.

**Potential savings in drug policy equal 216 million euros,** the main improvements consist mainly of reduced expenses on pharmaceuticals which do not fulfil cost efficiency criteria, broadening central procurement and digitisation. Public resources currently cover all costs of certain pharmaceuticals for rare diseases which were evaluated as too expensive in Canada or England. It is possible to save up to 114 million euros in this area in 2020.

**Better organisation of outpatient care can bring in 207 million euros per year.** Specialised outpatient care in Slovakia is used excessively, even for interventions commonly performed by a general practitioner in Western

countries. This is caused by the highest number of doctor visits per citizen of all EU countries and a high rate of referrals by general practitioners. To change this situation, it is necessary to broaden the competences and number of general practitioners. The saved funds can be reallocated among the existing providers more efficiently.

**The potential of other cost-saving policy measures is 119 million euros.** Other policy measures include reduction of excessive use and unit prices of laboratory and imaging diagnostics, improvement of review processes in public health insurance and more efficient purchasing of medical devices.

**Resources saved by the cost-saving policy measures must be invested in underfunded areas with a potential for better outcomes.** A higher number of general practitioners along with broadening of their competences would improve patient management and reduce the number of more expensive specialist visits, according to best practice abroad. It is necessary to increase the salaries of nurses to international level and then increase their number. Investments in prevention and mental health promotion reduce future burden on healthcare and social systems and increase labour productivity. According to the experience in Western countries, their return on investment can be very high. The value in healthcare is increased also by capital expenditure of the Ministry of Health in hospitals amounting to 69 million euros in 2020 and 98 million euros per year in 2021 and 2022.

**Population ageing and related long-term care present a huge challenge.** There is a shortage of hospital and community centre capacities and insufficient support of home care and integration of healthcare and social services. This question will only gain more significance as the population ages. Investments in long-term care will improve the quality of life for dependent people and their families and, at the same time, reduce the burden on healthcare system because the necessary care will be transferred out of more expensive acute hospital beds.

**In the previous years, spending review managed to save 115 million euros per year without negative impact on citizens' health,** mainly by reducing overconsumption of pharmaceuticals, referencing prices of special medical material to prices abroad and improving review processes in the public health insurance company.

**All healthcare expenses are documented in a detailed fashion in the general government budget.** The “no-policy-change” scenario takes into consideration salary growth according to automatic salary increase mechanism, inflation and increase in consumption of pharmaceuticals. Other expenses are divided into cost-saving and value-increasing policy measures. The budget also takes into account population ageing, necessary supplementary funding of the sector and introduction of new pharmaceuticals to the market. This is how healthcare budget has been prepared since the start of the Value for Money project in 2016. The need for supplementary funding during the year, which arose also in 2019, is caused by non-compliance with agreed measures, new measures proposed during the year and bad management.

**Expenses on salaries increase by 144 million euros year-on-year. The gravest personnel issue is not the salary but shortage of nurses, age structure of doctors and nurses and distribution of doctors among different specialisations.** The salaries of Slovak doctors and nurses, calculated as a multiple of average salary and thus taking into consideration the economic level of Slovakia, are comparable to other European countries. They increase annually according to average salary in the economy thanks to automatic salary increase mechanism. The specialist ratio is one general practitioner to three specialists, while there are only 60% more specialists than GPs in Western countries. As much as 43% of general practitioners and 20% of nurses are more than 60 years old. Slovakia lacks at least 3,600 nurses.

**Hospital stratification will increase healthcare quality,** shorten average hospital stay and increase resources per admitted patient. Acute hospital beds freed up by the stratification will be transformed into follow-up care capacities. University and teaching hospitals still generate losses. This could be resolved by their supplementary funding and stratification.

**Implementing and observing standard processes based on best practice abroad is another tool to improve the quality of healthcare and save resources, but these are slow to be created in Slovakia. Incorrect resource allocation in Slovak healthcare is well illustrated by obstetrics.** Infant mortality in Slovakia is higher than e.g. in Great Britain, even though British women go to fewer pre-natal examinations, the majority of interventions and consultations is done by midwives instead of doctors, more births take place outside of hospitals and hospital stay after giving birth is much shorter – 1.4 day compared to 4.7 in Slovakia.

**Slovak citizens pay 1 billion euros extra in out-of-pocket payments for healthcare.** The private to public funds ratio is comparable to European countries but the Slovak system of patient OOP is chaotic and lacks clear strategy. Co-payments for pharmaceuticals amount to 40% of private payments, the rest includes medical devices, dental and residential care. Patients would save 66 million euros if they chose a generic medication instead of the original medication every time this is possible.

**Systemic reforms without direct financial impact, such as e-Health and DRG, are necessary in order to improve Slovak healthcare.** Medical records digitisation and e-prescriptions within e-Health reduce unwanted overconsumption and improve doctors' awareness of pharmaceuticals used by their patient, which in turn reduces the number of adverse interactions. Sharing examination results among doctors will help avoid duplicate examinations. Implementation of other changes related to DRG will increase transparency and fairness of healthcare payments and has the potential to improve the efficiency of hospital management. Both policy measures have achieved significant progress in 2019 but they are still not fully functional. This delay robs Slovak healthcare of the expected benefits.

# 1 Outcomes and goals

**Population health is to a great extent influenced by the functioning of healthcare system in the country.**

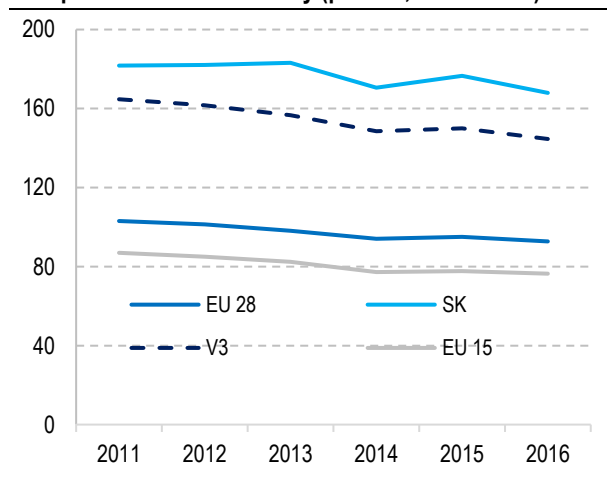
The state should provide early and accessible healthcare to its citizens, resulting in saved lives, prevention, diagnostics, treatment of illnesses and relief of their manifestations. According to OECD (2017), a well-functioning healthcare system requires a correctly adjusted funding mechanism, educated and adequately paid medical staff, policies and decisions based on reliable data and infrastructure corresponding to technological progress.

**The main status indicator of Slovak healthcare is treatable mortality<sup>1</sup>.** This indicator represents the number of treatable causes of death per 100,000 citizens. Causes of death characterised as treatable are those that could have been avoided by early and efficient treatment. The most frequent treatable causes of death in EU countries are coronary artery disease, vascular brain diseases and some forms of cancer (Eurostat, 2019).

**The goal of the government is to reduce treatable mortality to V3 level by 2025.** Slovak level of treatable mortality (168 deaths per 100,000 citizens)<sup>2</sup> is twice the average in EU15 countries (76 deaths) and higher than the average in V3 countries (145 deaths). If Slovakia was on V3 level in 2016, the deaths of around 1,300 people would have been avoided. If we achieved the EU15 level, it would mean approximately 5,000 treatable causes of death per year less.

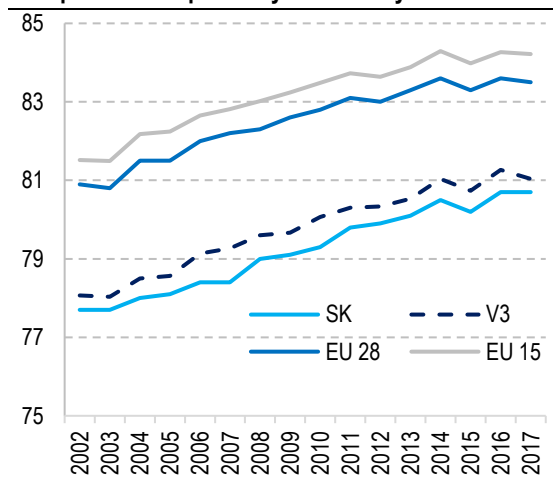
**Female life expectancy at birth is a supplementary outcome indicator. This is another area where Slovakia lags behind reference countries.** The advantage of this indicator is its relatively stable methodology and that it has been monitored for a long period of time. Its disadvantage is that the causes of death include also those which cannot be influenced by healthcare.

**Graph 1: Treatable mortality (per 100,000 citizens)**



Source: Eurostat

**Graph 2: Life expectancy at birth in years**



Source: OECD

**Slovakia stays behind its neighbouring countries regarding healthcare outcomes, in spite of comparable prevalence of diseases which contribute the most to treatable causes of death (Chyba! Nenašiel**

<sup>1</sup> Until 2018, the term “amenable mortality” was used. At the end of 2018, the European Commission and OECD decided to change the existing term from “amenable mortality” to “treatable mortality” and to standardise the calculation method (OECD & Eurostat, 2019).

<sup>2</sup> Lower values compared to previous Healthcare spending reviews are explained by the change of calculation method from 2018. <https://www.oecd.org/health/health-systems/Avoidable-mortality-2019-Joint-OECD-Eurostat-List-preventable-treatable-causes-of-death.pdf>

sa žiaden zdroj odkazov.). According to Institute for Health Metrics and Evaluation<sup>3</sup>, Slovakia even has a lower prevalence of cardiovascular diseases, chronic respiratory diseases, diabetes and renal diseases.

**Table 1: Prevalence of diseases in population and treatable mortality (2017)**

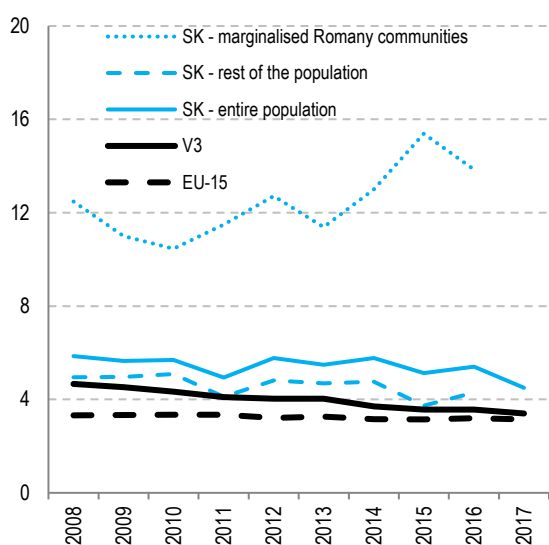
	Treatable mortality 100,000 citizens	Prevalence of diseases in population					
		Cardio-vascular	Chronic respiratory	Oncological	Diabetes and renal	Neurological	Digestive
SK	168	13%	10%	3%	17%	48%	30%
V3	145	15%	13%	3%	21%	48%	30%
EU15	76	12%	13%	4%	19%	51%	27%

Source: GBDCN, Eurostat

**Health inequality in Slovakia is reflected in infant mortality which is considerably higher in marginalised Romany communities compared to the rest of the population (Chyba! Nenašiel sa žiaden zdroj odkazov.).** It is also higher than in the compared countries even after excluding the marginalized Romany communities from the data (more in Chapter 12).

**Preventable mortality rate in Slovakia is on a similar level as in the neighbouring countries and much higher than in Western countries (Chyba! Nenašiel sa žiaden zdroj odkazov.).** This includes causes of death which could have been prevented by better public health and prevention programmes (more in Chapter15).

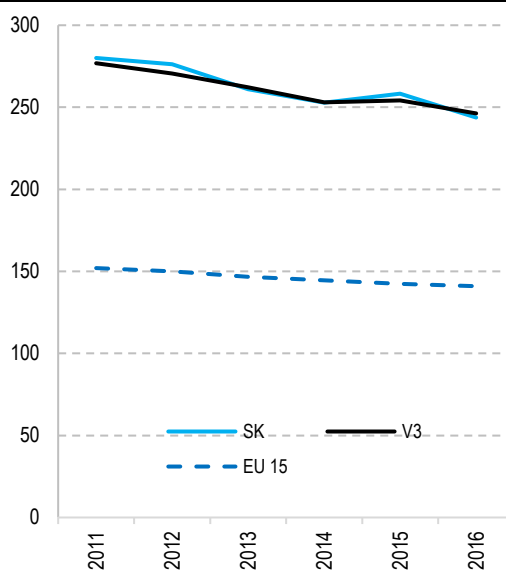
**Graph 3: Infant mortality (number of deaths in the first year of life per 1,000 live births)**



Note: All values classify people according to their country of residence.

Source: Natural persons registry, Romany Communities Atlas 2013, Eurostat, Value for Money calculations

**Graph 4: Preventable mortality (per 100,000 citizens)**



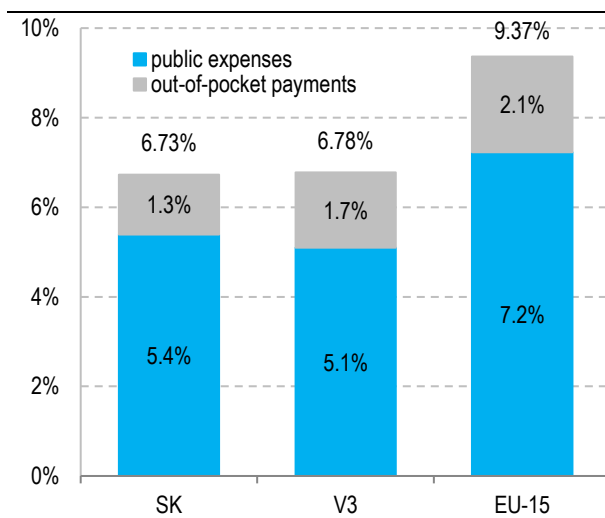
Source: OECD

<sup>3</sup> The Institute for Health Metrics and Evaluation manages a global database Global Burden of Disease: <http://ghdx.healthdata.org/gbd-results-tool>

## 2 Expenditures

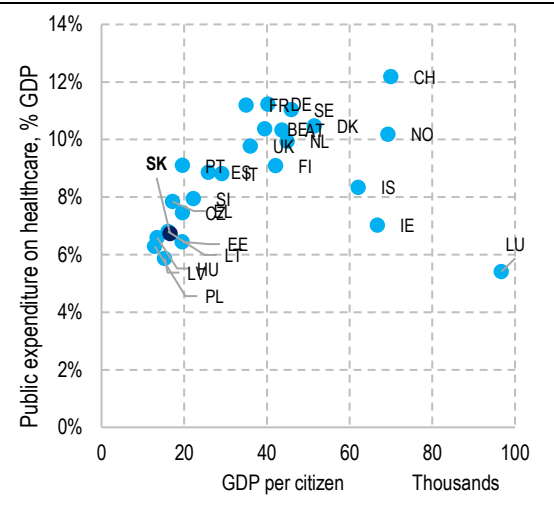
In 2018, the overall healthcare expenses in Slovakia represented 6.7% GDP, public expenses amounted to 5.4% GDP and the rest were out-of-pocket payments<sup>4</sup>. The Slovak healthcare expenditure as proportion of GDP is comparable to the average in V3 countries (6.8%) and less than the average in EU15 countries (9.4%) (Chyba! Nenašiel sa žiaden zdroj odkazov.). In general, the richer the country is, the more it spends on healthcare not only per nominal amount, but also per percentage of GDP. Slovak healthcare expenditure corresponds to the wealth and development status of the country (Chyba! Nenašiel sa žiaden zdroj odkazov.). Slovakia dedicates a larger portion of GDP to public healthcare expenses than the neighbouring countries.

Graph 5: Public expenditure on healthcare, 2018, %GDP



Source: OECD

Graph 6: Relation between the wealth of a country and healthcare expenditure, 2018

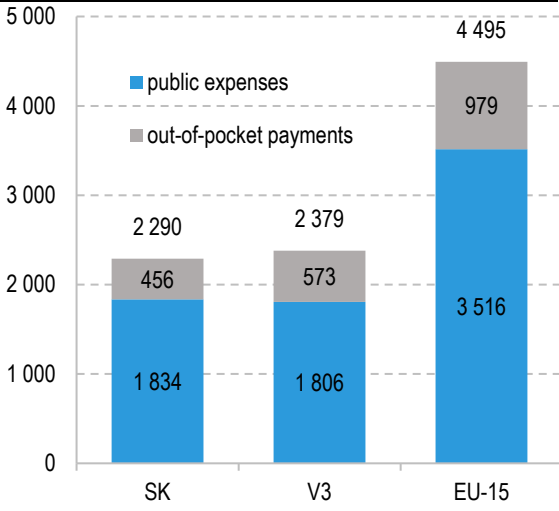


Source: OECD

Overall, Slovakia dedicates a little less money to healthcare than the V3 countries per citizen, in terms of total health expenditure, adjusted by purchasing power. However, the country's public expenditure is higher compared to them and its healthcare outcomes are worse. Overall, Slovak health expenditure is 4% lower than the average in V3 countries, but treatable mortality rate is higher by 16%. There are more deaths preventable by better healthcare in Slovakia than in Poland, Estonia and Greece (95 – 143 preventable deaths, the average being 122, thus 27% less than in Slovakia), even though the average expenditure in these countries is 5% lower (Chyba! Nenašiel sa žiaden zdroj odkazov.).

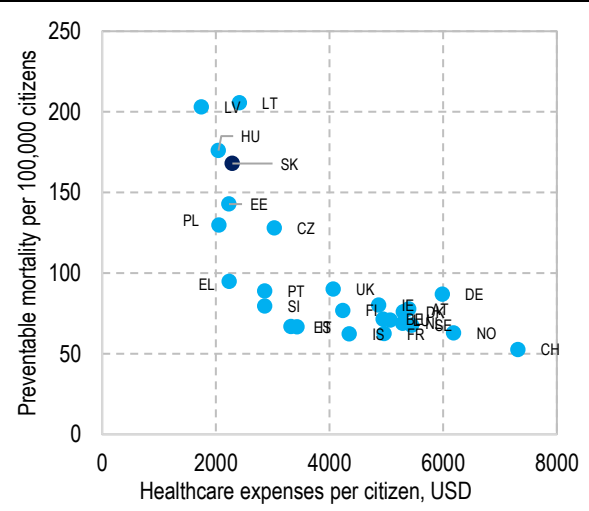
<sup>4</sup> The information about public healthcare expenses of 5.4% GDP comes from OECD statistics. OECD data use the SHA methodology (System of Health Accounts). An alternative methodology is connected methodologies COFOG and ESA 2010 which state public healthcare expenditure in 2018 amounting to 7.2% GDP. However, COFOG and ESA 2010 count expenses on public hospitals twice. The information according to SHA methodology differs from the actual sum of expenses which amounts to 5.7% GDP.

**Graph 7: Total expenditure on healthcare, 2018, per citizen in purchasing power parity, USD**



Source: OECD

**Graph 8: Relation between population health and healthcare expenses, 2016**

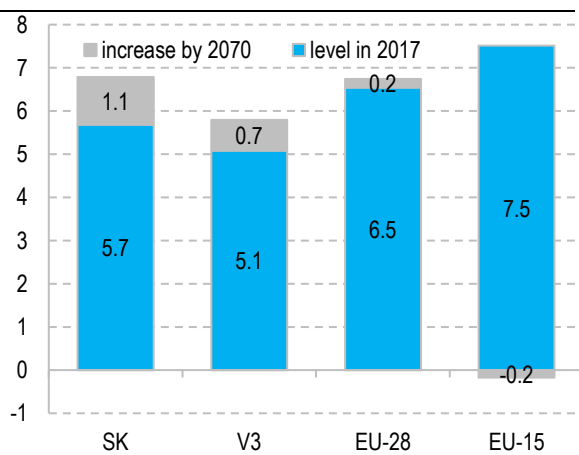


Source: OECD, Eurostat

**Public healthcare expenditure in Slovakia represents a higher portion of overall public expenditure compared to EU countries.** In 2018, Slovak healthcare expenses amounted to 17.7% of public expenses, while the average in EU15 countries was 15.5% and in V3 countries 13.6%.

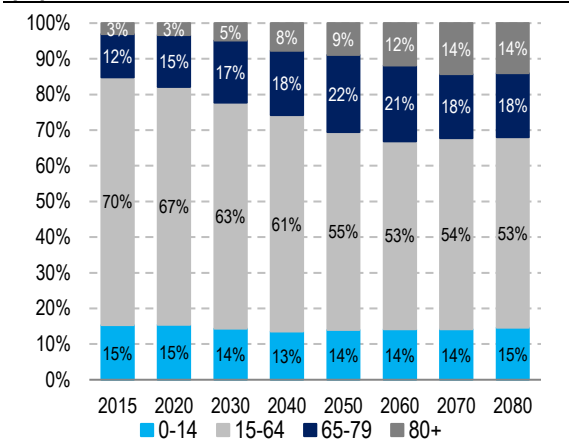
**In the long-term, the pressure to increase healthcare expenditure will be getting stronger.** According to a prediction of the European Commission (EC), healthcare expenses due to population ageing will increase in Slovakia at the sixth highest rate out of EU countries and the fastest out of V4 countries (EC, 2017). This is caused by higher life expectancy and low birth rate. According to the EC predictions, Slovak public healthcare expenses will increase by further 1.1 percentage point to 6.8% GDP by 2070 (**Chyba! Nenašiel sa žiadny zdroj odkazov.**). This is caused mainly by growing need for healthcare in old age; for example, annual healthcare expenditure for an average 75-year-old man is approximately 7 times higher than for a 25-year-old. Therefore, Slovak healthcare policy should first of all try to achieve efficient allocation of funds, correct functioning of the system and subsequently controlled increase of expenses according to ageing prognosis.

**Graph 9: Healthcare expenditure (% GDP)**



Source: EC 2017

**Graph 10: Projection of age structure of the population**



Source: Eurostat



## 2.1 Expenses by area of healthcare

As much as 77% of healthcare expenses is allocated to three areas: pharmaceuticals (22%), inpatient (30%) and outpatient care (24%). More than 40% of the expenses are dedicated to healthcare staff salaries.

**Table 2: Public health insurance (PHI) expenses, 2018**

	million euros	proportion of PHI
<b>Healthcare (HC)</b>	<b>4,564</b>	<b>95%</b>
Pharmaceuticals and dietetic food	1,066	22%
Medical devices	170	4%
Inpatient care	1,312	27%
General outpatient care	256	5%
CETU*	541	11%
Specialised outpatient care	882	18%
Emergency service	20	0.4%
Rescue service	94	2%
Spa care	54	1%
Transport	27	1%
Helicopter rescue service	11	0.2%
Other subjects and HC	130	3%
<b>Other PHI expenses</b>	<b>222</b>	<b>5%</b>
<b>PHI total</b> (other payments and transactions not included)	<b>4,786</b>	<b>-</b>

Note: \*Common examination and treatment units (CT, MR and laboratory examinations)

Source: Ministry of Health of the Slovak Republic, insurance company records

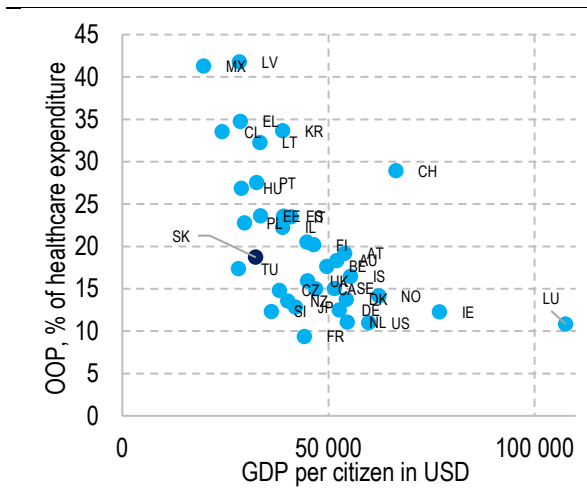
## 2.2 Out-of-pocket payments for healthcare

**Out-of-pocket payments for healthcare are one of the standard sources of healthcare funding. It is essential that they do not have a negative impact on public health and accessibility of healthcare, particularly for economically vulnerable citizens.** Correctly defined and set out-of-pocket payments (OOP) in healthcare can, for example, help rationalise the use of healthcare services, increase efficiency and quality of the services, cover the expenses of healthcare providers or increase revenue. On the other hand, unchecked amounts and structure of OOP can cause financial problems and jeopardize accessibility of necessary healthcare with an impact on health, poverty and social inequalities. Out-of-pocket payments depend on the capacity and/or willingness of households to pay. If the price of healthcare is higher than the household's capacity to pay for it, it might delay the use of healthcare or renounce it completely. If a household struggles to pay other costs of living due to OOP, it can be assigned the status of financial hardship.

**Patients pay for a part of healthcare out of their pockets in every country.** In countries with higher standard of living, the OOP proportion in the overall healthcare expenditure is smaller than in less rich countries (**Chyba! Nenašiel sa žiaden zdroj odkazov.**).

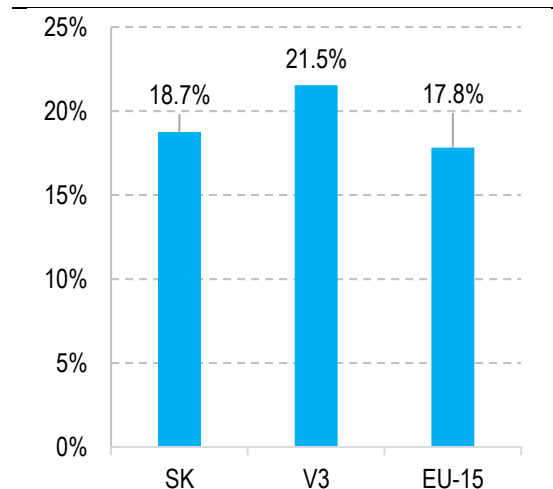
**Slovakia ranks a little above the EU average regarding the portion of OOP in overall healthcare expenditure** (Chyba! Nenašiel sa žiaden zdroj odkazov.). Slovak households pay around 18.7% of the expenses out of their pockets; in 2017, an average Slovak paid approximately 200 euros for healthcare out of their pocket (NHIC).

**Graph 11: OOP portion in overall healthcare expenditure in relation to GDP per citizen (2017)**



Source: OECD

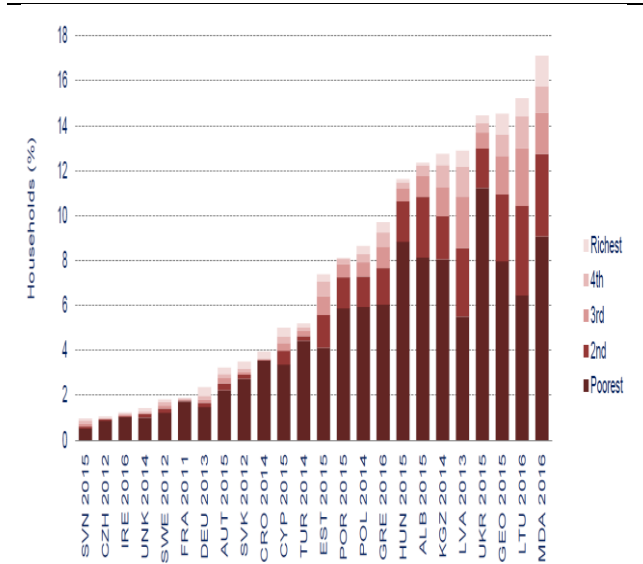
**Graph 12: OOP portion in overall healthcare expenditure (2017)**



Source: Eurostat

The share of households facing financial hardship due to out-of-pocket payments is relatively small in Slovakia compared to other countries (WHO, 2019). Approximately 3.5% of households face catastrophic health spending<sup>5</sup> (**Chyba! Nenašiel sa žiaden zdroj odkazov.**). OOP cause financial problems mainly for households with low consumption or income in all countries, including Slovakia. Slovakia is similarly situated in the international comparison of so-called impoverishing health spending<sup>6</sup> (**Chyba! Nenašiel sa žiaden zdroj odkazov.**). This affects less than 2% of Slovak households, however, the majority of them is situated below poverty line even before paying the OOP (red part of the graph).

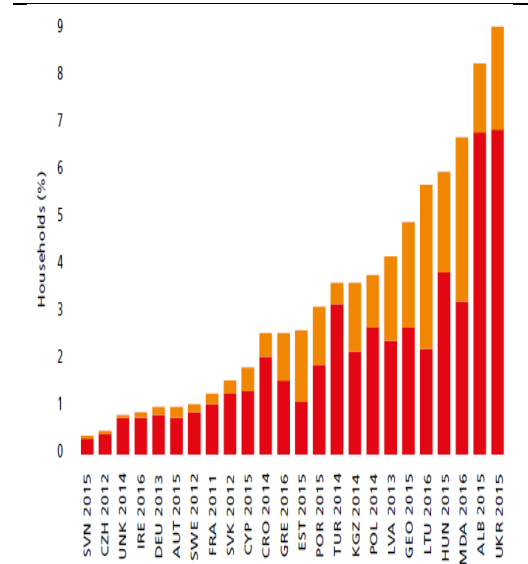
**Graph 13: Share of households facing catastrophic health spending**



Note: Quintiles per household consumption

Source: WHO

**Graph 14: Share of households facing impoverishing health spending**



Note: orange – households which fell below poverty line because of OOP  
red – households which had been below poverty line before OOP

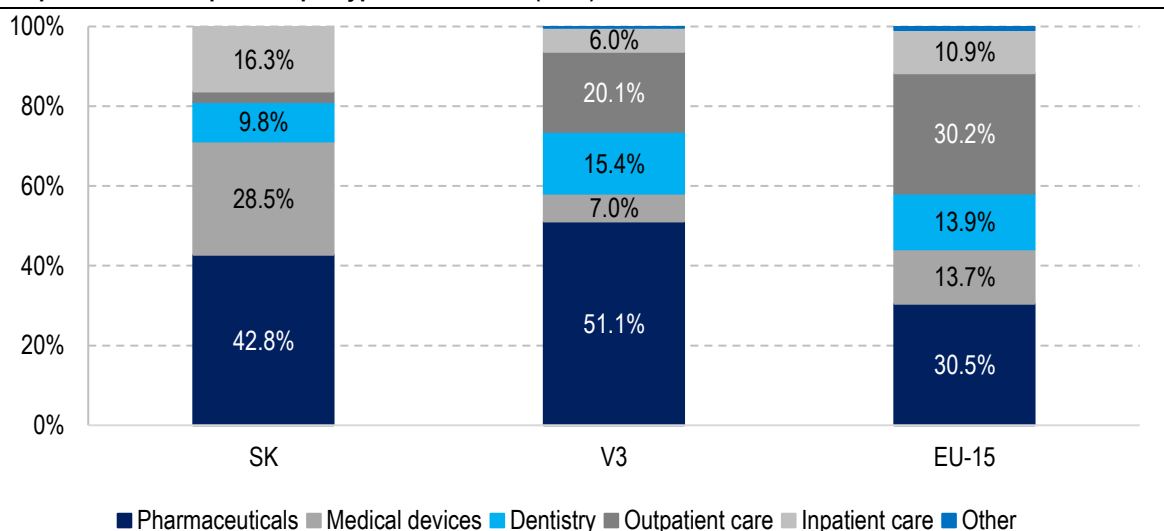
Source: WHO

<sup>5</sup> Catastrophic health spending is defined as OOP amounting to more than 40% of household budget minus basic expenses.

<sup>6</sup> Impoverishing health spending is evaluated according to the placement of household above or below poverty line before and after paying OOP.

**OECD countries including Slovakia pay most of the OOP for pharmaceuticals and medical devices. Part of this represents voluntary OOP.** Regarding the type of healthcare, households in OECD countries pay the most for pharmaceutical healthcare including pharmaceuticals and medical devices, which constitute almost half of OOP for households (**Chyba! Nenašiel sa žiaden zdroj odkazov.**). The share in Slovakia amounts to as much as 71%. The second largest OOP category is outpatient services including dentistry. This specialty is characterised by high patient OOP in the majority of countries. Slovakia is far below average in OECD countries in payments for outpatient services. In 2015, patients paid 10% of OOP at their dentist's and only 3% in other outpatient services (Chapter 6.4).

**Graph 15: OOP components per type of healthcare (2015)**



*Note: Outpatient services include dentistry in some EU15 countries, unless otherwise stated*

*Source: OECD*

**The issue with out-of-pocket payments in Slovakia is their poor organisation, which is related to a lack of definition of basic package, which leaves room for unauthorised fees.** Authorised payments to providers are stated in legislation and are clearly reported by the providers. However, many providers demand unauthorised fees, such as for making an appointment (directly or via other companies), and thus reduce HC accessibility for socio-economically more vulnerable population groups.

**Measure:** Establish transparent rules for patient out-of-pocket payments.

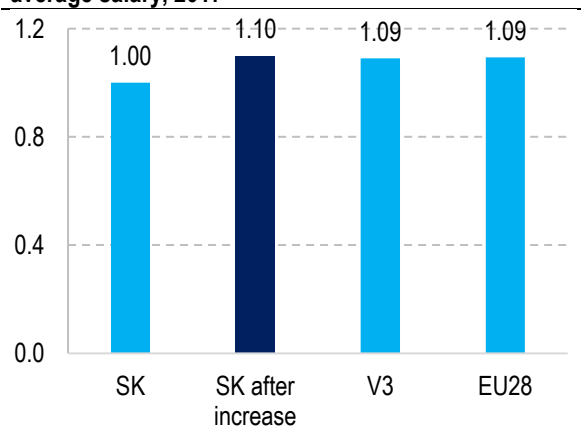
### 3 Budget

**New budget for 2020 allocates 5.6 billion to healthcare**, of which public health insurance represents 5,418 million euros. Beyond public health insurance resources, further 69 million euros will be invested in hospitals as capital expenditure and the rest is intended for current expenditure of the Ministry of Health. Therefore, public health insurance expenses will be 487 million euros higher compared to the 2019 budget.

**The funds in the new budget will be used for priorities which will improve healthcare outcomes the most and bring patients more value for money. In 2020, expenses on follow-up healthcare** in hospitals or at home **will increase**, which will in turn improve follow-up treatment and accessibility of professional care for chronically ill patients, particularly the elderly. Investments in follow-up and long-term care are necessary in order to cover the needs of fast-ageing population.

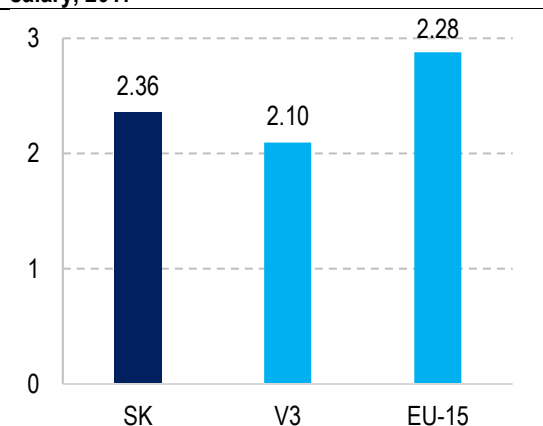
**The highest increase in the budget accounts for salaries which are raised annually according to the increase in average salary; in 2020, they will increase by 144 million euros. In 2019, salaries of nurses and other paramedical staff were raised across the board by 123 million euros (10%) beyond automatic salary increase mechanism.** Salaries of nurses in Slovakia had been lower than in other European countries for a long time; after this change, they amount to 1.1 multiple of the average salary and will now be comparable to V3 and EU15 countries (Graph 16). However, the problem with their number still remains (more in Chapter 11). Salaries of Slovak doctors in inpatient facilities are higher than in V3 countries, however, they are still approximately 18% lower than the average in EU15 countries with available data (Graph 17).

**Graph 16: Specialist nurse salary as a multiple of average salary, 2017**



Source: OECD

**Graph 17: Doctor salary as a multiple of average salary, 2017**



Source: OECD

**The budget takes into account long-term needs related to population ageing.** Population ageing inevitably causes an increase in healthcare costs in all areas of healthcare. Its estimated impact is 28 million euros in 2020 (more in Chapter 3.1).

**Hospitals will get 69 million euros allocated to capital expenditure** beyond their income from public health insurance, particularly for building renovations and instrument modernisation. This effort will contribute to the continuous coverage of long-neglected investment debt of hospitals. To maximise the efficiency of these funds, it is necessary to invest them according to the approved hospital network stratification strategy (Chapter 4.3) and publicly report the investments.

**Efficiency measures in healthcare will save 148 million euros in 2020. Most funds will be saved on pharmaceuticals, 114 million euros total, further 10 million euros on medical devices and 10 million euros on common examination and treatment units (Table 3).**

**Table 3: Budget in programme structure (in million euros)**

	2019 ER	2020 S	Y-o-Y difference		Cost-saving policy measures
			million euros	%	million euros
<b>Healthcare</b>	<b>4,931</b>	<b>5,168</b>	<b>236</b>	<b>4.8%</b>	<b>-144</b>
Pharmaceuticals and dietetic food	1,085	1,039	-45	-4%	-114
Medical devices	173	164	-9	-5%	-10
Inpatient care	1,508	1,642	135	9%	-6
General outpatient care	290	317	27	9%	0
CETU*	578	600	22	4%	-10
Specialised outpatient care	929	996	68	7%	-4
Emergency service	25	26	1	4%	0
Rescue service	111	131	20	18%	0
Spa care	55	59	4	7%	0
Transport	32	33	1	3%	0
Helicopter rescue service	11	12	0	4%	0
Other subjects and HC	135	147	13	9%	0
<b>Other PHI expenses</b>	<b>236</b>	<b>251</b>	<b>15</b>	<b>6%</b>	<b>-4</b>
<b>PHI total (other payments and transactions not included)</b>	<b>5,167</b>	<b>5,418</b>	<b>251</b>	<b>4.9%</b>	<b>-148</b>

*Note: \*Common examination and treatment units (CT, MRI and laboratory examinations)*

**A change in the manner of healthcare funding will take place in 2020.** Public health insurance income consists of economically active insured persons' contributions and payments for state-insured persons. Up to now, payments for state-insured persons depended on the average salary, which was causing cyclical healthcare funding. According to the new rules, the purpose of payments for state-insured persons is to bridge the revenue gap. The amount is established as a difference in needs of the healthcare system and income from economically active citizens' contributions to the public health insurance. It allows for a more stable funding of healthcare.

**Health insurance companies are responsible for resource allocation of public health insurance, taking into account legislative options and restrictions.** If their healthcare procurement strategy does not correspond to the budget, it might cause problems with its observance. For example, in 2019, the estimated expenses on outpatient care and common examination and treatment units were higher by 56 million euros than stated in the business plan of the largest HIC Všeobecná zdravotná poisťovňa (VŠZP), which is also the state HIC.

#### **Box 1: Budgeting process**

**Budget for the next year is drawn up as a sum of actual expenditure for the year previous to the current year, changes approved in the current year and planned expenditure changes in the following year.** Expenditure changes can take place without changes in policy (NPC) or as a consequence of policy changes, either increasing expenses or saving resources:

1. **No-policy-change expenses or NPC** reflect normal increase in expenditure stemming from the current functioning of the system. Expenses not related to salary typically increase according to inflation or values determined in legislation, expenses related to salary depend on increase in

average salary and valid regulations (for example automatic salary increase mechanism<sup>7</sup> in inpatient care).

2. **Policy-change expenses or PC** represent an increase in expenses caused by value-increasing policy measures or other measures. **Value for Money value-increasing policy measures** improve the quality and accessibility of healthcare. They are a result of the spending review. **Other changes** in policies increase expenditure as a result of approved legislation changes.

Current policy changes (PC) will become part of the no-policy-change (NPC) scenario when the next budget is created since they will already be part of valid legislation for that year. A measure remains classified as a policy change if it is implemented gradually over the course of several years.

3. **Value for Money cost-saving policy measures** include savings as a result of the spending review. If part of the intended savings is not achieved in the planned year, it will be reflected in estimated savings for the following year.

**Table 4: 2020 budget and expenditure changes**

	million euros
2019 budget approved by the Government of the SR*	4,931
Expected expenditure (EE) 2019	5,167
<b>2020 difference from expected expenditure for 2019, of which</b>	<b>251</b>
NPC	232
PC	167
cost-saving policy measures	-148
<b>PHI budget 2020 (expected expenditure 2019<sup>8</sup> + changes)</b>	<b>5,418</b>
Increase in budget compared to expected expenditure for 2019	4.9%
<b>Healthcare budget for 2020 (including expenditure of the of the Ministry of Health)</b>	<b>5,577</b>

\*further 55 million euros were added after negotiations of the National Council of the SR in October 2018

### 3.1 No-policy-change expenses

**Without policy changes, expenditure increase in 2020 is estimated at 232 million euros.** Expenses not related to salary increase according to inflation, expenses related to salary of healthcare professionals increase according to valid legislation (automatic salary increase mechanism) and expenses related to salary of other staff increase according to the average salary, in compliance with the no-policy-change scenario manual.

<sup>7</sup> Explanation of automatic salary increase mechanism is included in a box in Chapter 11.

<sup>8</sup> Expected expenditure 2019 is used because actual expenditure 2019 is not known at the time of budgeting process for 2020.

**Table 5: Expenditure changes compared to 2019 – PHI – no-policy-change (in million euros)**

No.	2020	2021	2022
<b>Total</b>	<b>232</b>	<b>455</b>	<b>680</b>
<b>Non-salary expenditure</b>	<b>35</b>	<b>70</b>	<b>107</b>
1 Non-salary expenditure except pharmaceuticals (increase by CPI)	35	70	107
<b>Salary expenditure</b>	<b>144</b>	<b>297</b>	<b>450</b>
2 Automatic salary increase mechanism for doctors in inpatient care	32	68	105
3 Automatic salary increase mechanism for others in inpatient care + MP*	48	100	151
4 Non-medical staff	19	40	61
5 Healthcare professionals in outpatient care	40	83	127
6 Rescue service staff	6	6	6
<b>Other PHI expenses</b>	<b>15</b>	<b>21</b>	<b>28</b>
7 Health insurance company administration, contributions to HCSA, Emergency Control Centre, NHIC, other payments	15	21	28
8 <b>Population ageing</b>	<b>28</b>	<b>57</b>	<b>85</b>
9 <b>Pharmaceuticals (morbidity increase)</b>	<b>10</b>	<b>10</b>	<b>10</b>

Note: \*MP – minimum pay

- The increase in non-salary no-policy-change expenses consists of expenses on pharmaceuticals and other expenses. Expenses on pharmaceuticals do not increase in the NPC scenario, eventual changes in these expenses are reflected in PC items (Chapter 3.2); increase in the other expenses is estimated at inflation level, totalling 35 million euros in 2020 (No. 1, Table 5).
- Automatic annual salary increase (according to valid legislation, so-called automatic salary increase mechanism) for doctors in inpatient facilities will reach 32 million euros in 2020 (No. 2), 48 million euros for other healthcare professionals (No. 3), and 19 million euros for non-medical staff (No. 4).
- Estimated impact of salary increase of outpatient staff is 40 million euros in 2020. Although outpatient care is funded via payments for procedures and capitations, salaries are artificially increased in order to ensure growth comparable to the salary increase of healthcare professionals in inpatient care (No. 5).
- Salaries of rescue service staff will increase by 6 million euros (No. 6).
- Other PHI expenses will achieve 15 million euros in 2019 (No. 7). This includes, for example, contributions to HCSA and NHIC.
- The budget takes into account the impact of population ageing. This causes an increase in expenses which is manifested e.g. in higher consumption of pharmaceuticals or healthcare. Its estimated impact is 28 million euros in 2019 (No. 8). The values are based on calculations made by the Council for Budget Responsibility.
- Expenses on pharmaceuticals will increase by 10 million euros due to higher consumption caused by higher morbidity and better diagnostics (No. 9).

### 3.2 Policy-change expenses

**Healthcare policy changes will increase the budget by 167 million euros in 2020.** This increase includes higher expenses on follow-up care, pharmaceuticals, cross-border care, ambulances, continuation of contracted increases in healthcare expenses and compensation for insurance companies after discontinuation of distraint proceedings.

**The review also outlines long-term priority policy measures which increase quality, accessibility and sustainability of healthcare.** Investments in priority areas (general outpatient care, staff, long-term care, prevention and mental health) are necessary in order to improve population health outcomes while keeping the resource increase sustainable. **Successfully saved funds thanks to policy measures stated in section 3.3 have to be channelled into these areas.** The review identifies a so-called value-increasing measure potential, or necessary target increase in resources in a particular area. The budget defines an implementation period, i.e.

a number of years in which the potential shall be fulfilled, and resource increase in individual years. Potential investment in priority areas amounts to 792 million euros per year in a 10-year period.

**Table 6: Policy measures – changes in PHI compared to 2019 (in million euros)**

No.		2020	2021	2022	Potential	Implementation period in years
	<b>Total</b>	<b>167</b>	<b>245</b>	<b>323</b>	<b>-</b>	<b>-</b>
	<b>Value-increasing policy measures – Value for Money</b>	<b>53</b>	<b>131</b>	<b>209</b>	<b>792</b>	
10	General outpatient care	0	11	23	113	10
11	Staff – increase in the number of nurses	0	11	21	107	10
12	Long-term care	15	21	27	340	10
13	Prevention	N/A	N/A	N/A	N/A	N/A
14	Mental health	0	12	24	118	10
15	Additional funding of inpatient care, SOC and GOC	38	76	114	114	3
	<b>Other policy changes</b>	<b>114</b>	<b>114</b>	<b>114</b>	<b>-</b>	<b>-</b>
16	Pharmaceuticals – impact of amendment 363/2011	35	35	35	-	-
17	Pharmaceuticals – introduction of newly categorised pharmaceuticals	20	20	20	-	-
18	Health insurance companies – discontinuation of distraints	12	12	12	-	-
19	Continuation of healthcare expenses per contracts from 2019	33	33	33	-	-
20	Inter-hospital ambulance	12	12	12	-	-
21	Increase in cross-border care	3	3	3	-	-

## 10. General outpatient care

Slovak healthcare allocates a smaller proportion of resources to general outpatient care (GOC) compared to V3 countries. According to best practice, extended GOC saves funds because general practitioners have broad competences and manage many procedures otherwise performed by more expensive specialists. General practitioners in Slovakia have limited competences and, at the same time, there is not enough of them and they age quickly, so they do not have further capacity to manage more competences. Before broadening their competences any further, it is necessary to invest in an increase of the number of GPs and their resources, training in new competences and appropriate technical and material equipment (more in Chapters 5 and 11). The goal for a 10-year period is that GOC expenses as a % of GDP will be evened up to the level of V3 countries to 113 million euros, of which 11.3 million euros in 2021.

## 11. Staff – increase in the number of nurses

According to the Ministry of Health of the SR, there is a lack of at least 3,600 nurses in the Slovak healthcare. Their shortage puts an excessive load on nurses currently working in the sector, which can have an impact on the quality and accessibility of healthcare. The shortage of nurses also impedes the transfer of part of doctors' competences to nurses, which would help save money. The increase in their number is planned to happen gradually over ten years and uses encouraging steps like improvement of salary conditions in 2019 or launch of stabilisation scholarships (more in Chapter 11). The investment reflects the number of nurses and super-gross salary in each year; the target investment for the tenth year is 107 million euros per year, of which 10.7 million euros in 2021.

## 12. Long-term care

Due to rapid population ageing, it is necessary to scale up long-term care capacities which no longer cover the needs of chronically ill patients and the elderly. According to best practice abroad, it is vital to improve community



care, assisted living and home care in particular, along with inpatient follow-up care wards and health and social care facilities. Broader long-term care saves funds in hospitals which currently care for chronically ill patients who often take up more expensive acute care beds, prevents repeated hospital stays thanks to adequate follow-up care and alleviates the burden for family members (more in Chapter 14). In a 10-year period, long-term care expenses as a % of GDP will be evened up to the level of EU15 countries to 340 million euros, adjusted by age structure. In 2020, the expenses on follow-up nursing services, residential hospice care, nursing homes and home nursing agencies will be increased by an investment of 15 million euros.

### **13. Prevention**

Slovakia has the sixth highest preventable mortality in the EU, i.e. causes of death which could have been prevented by better lifestyle, more favourable influence of the environment, prevention and screenings. The amount of expenses on prevention is not precisely calculated at the moment and, therefore, it is not possible to determine whether it is higher or lower than in other countries. However, considering the bad outcomes, it is probable that the expenses need to be increased significantly. Investments in prevention and health promotion programmes are very cost-effective, some even more than treatment (more in Chapter 15).

### **14. Mental health**

Slovak expenditure on mental health care lags behind other developed countries. Still, mental health issues have an impact not only on the quality of life of the afflicted, but also put a huge load on the economy. Investments in modern healthcare based mainly on strengthening community services and psychotherapy have a high return on investment. Expenses will be increased similarly to an analogous reform in the Czech Republic – in a 10-year period, the same package will be invested as in the Czech Republic, adjusted by number of inhabitants, amounting to 118 million euros, of which 11.8 million euros in 2021 (more in Chapter 16).

### **15. Additional funding of inpatient and outpatient care**

In 2020, resources for inpatient and outpatient care will be increased. University hospitals and teaching hospitals are unprofitable every year, which reflects in growing debt. The fact that health insurance companies' revenues have not been high enough to cover the hospitals' expenses on staff, pharmaceuticals, blood and medical material for a long time also contributes to the losses. Even if hospitals had zero expenses for utilities (e.g. electricity, heating, washing), the majority of them still could not cover the expenses on treatment only from public insurance. In outpatient care, resources for selected specialties, including general medicine, will be increased in order to strengthen general outpatient care (measure No. 10).

### **16. Pharmaceuticals – impact of amendment 363/2011 Coll.**

An amendment of the Law on Pharmaceuticals and Medical Devices came into effect in 2018. It was intended to give more patients with very rare diseases access to treatment reimbursed by the PHI. However, several controversial changes of wording of the draft have taken place during the legislation process, which led to a situation when a significantly higher number of pharmaceuticals with no proof of cost-effectiveness entered the list of long-term reimbursed pharmaceuticals than originally intended. The resulting unintended increase will be fully reflected in PHI budget from 2020 onward.

### **17. Pharmaceuticals – introduction of newly categorised pharmaceuticals**

This policy measure reflects the expected increase in PHI expenses on reimbursed pharmaceuticals which were introduced in Slovakia via standard authorisation process in 2018 and 2019 (they fulfilled the condition of cost-effectiveness). The estimated impact on public finance is 20 million euros from 2020.

## 18. Discontinuation of distraint proceedings

In June 2019, the National Council of the SR approved Law No. 233/2019 Coll. on discontinuation of certain distraint proceedings. This act provides that distraints whose material time of 5 years since the delivery of authorisation of enforcement has expired shall be discontinued on January 1, 2020. Health insurance companies face many distraint proceedings which comply with this condition, of which several have not yet been covered by provisions. Costs of the “old” distraint proceedings were determined at 42 EUR / item incl. VAT.

The law provides that health insurance companies will be obliged to count the provisions in their revenue already in 2019 and they will bear the costs of the discontinuation of these proceedings in 2020 – 2023. The expenses on the discontinuation of almost 298 thousand old distraint proceedings are estimated at 12.1 million euros in 2020.

## 19. Continuation of past contracts from 2019

Health insurance companies do not have a universal date for negotiations about amendments to contracts; they negotiate with associations and individual providers throughout the year. These time lags mean that healthcare is contracted under certain conditions for several years. It has resulted in a situation where some expenses shift in time and increases from 2018 partially overlap with 2019 and those from 2019 with 2020. This continuation has been calculated at 32.7 million euros in 2020, which includes expenses on inpatient and outpatient care, CETU, ambulances, spas and transport.

## 20. Inter-hospital ambulance

Inter-hospital ambulance rescue service (type “S”) is intended mainly for urgent transport of patients between healthcare facilities if the patient’s condition requires healthcare to be provided during the transport.

## 21. Increase in cross-border care

Given the development in the last years, it can be expected that the amount of healthcare which people insured in Slovak health insurance companies use abroad will increase. This phenomenon can be caused by more frequent travelling, migration and medical tourism for types of healthcare which are not provided in Slovakia.

## 3.3 Cost-saving policy measures

**Cost-saving policy measures in public health insurance amounting to 148 million euros will be implemented in 2020.**

**Cost-saving policy measures will focus on the areas of healthcare with inefficient resource allocation.** Some savings are achieved by evening Slovak indicators up to foreign benchmarks (“top-down” approach), others by specific changes of the system (“bottom-up” approach). **Slovak citizens will get more for their money if it is channelled to policy measures in priority areas described above** (Chapter 3.2). This spending review identifies a so-called potential, which is total annual savings achievable by the introduction of the measure. The budget defines an implementation period in years in which the potential savings will be achieved and gradual resource savings in individual years.

**Table 7: Policy measures – PHI savings compared to 2019 (in million euros)**

No	million euros	2020	2021	2022	Potential	Implementation period in years
<b>Total</b>		<b>-148</b>	<b>-249</b>	<b>-333</b>	<b>-542</b>	
22	<b>Inpatient care</b>					
	Decrease in avoidable hospital stays to V3 level	-1.5	-3.0	-4.4	-7.4	5
23	<b>Outpatient care</b>					
	Decrease in specialised outpatient care visits	0.0	-20.7	-41.4	-207	10
	<b>Pharmaceuticals</b>					
24	Cost-effectiveness of pharmaceuticals	-8.0	-36	-55	-55	3
25	Central procurement of pharmaceuticals	-13	-26	-26	-26	2
26	Overconsumption of pharmaceuticals	-1.4	-2.8	-4.2	-7	5
27	Promotion of introduction of generic pharmaceuticals and biosimilars	-3	-3	-3	-3	1
28	International price comparison of pharmaceuticals twice a year	-2.1	-2.1	-2.1	-2.1	1
29	External referencing	-2.4	-4.8	-4.8	-4.8	2
30	Lower payments for categorised pharmaceuticals in 2019 (introduction of biosimilars and generic pharmaceuticals, external referencing, payment groups)	-30	-30	-30	-64.6	2*
31	Change of payment groups from January 1, 2020	-7.9	-7.9	-7.9	-7.9	1
32	eHealth	-30	-30	-30	-30	1
33	Exceptional payments for uncategorised pharmaceuticals	-16	-16	-16	-16	1
	<b>CETU</b>					
34	Referencing prices of procedures to the Czech Republic	-0.3	-4.2	-8.9	-8.9	3
35	Redundant examinations	0.0	-12.3	-24.6	-24.6	3
36	Laboratory examinations – payments	-9.7	-9.7	-9.7	-9.7	1
	<b>Medical devices</b>					
37	Central procurement of incontinence products	-1.1	-2.2	-2.2	-2.2	2
38	Incontinence products – implementation of basic functional type	-4.7	-9.3	-14	-14	3
39	Extension of the international price comparison	-3.8	-3.8	-3.8	-3.8	1
	<b>Standard procedures</b>					
40	Obstetrics – fewer obstetrics examinations and C-sections	0	-0.8	-1.7	-4.2	5
	<b>Všeobecná zdravotná poisťovňa (state health insurance company, VŠZP)</b>					
41	Review activity, stricter indirect reviews	-8	-14	-28	-28	3
42	More efficient operation	-4	-10	-15	-15	3

\*the remaining 35 million euros will be saved already in 2019

## 22. Inpatient care – Decrease in preventable hospital stays to V3 level

Patients in Slovakia are excessively admitted to hospitals for diseases which can be prevented by better outpatient care. Slovakia exceeds the average in V3 countries particularly in the number of hospital stays for hypertension, heart failure or asthma. More than 7 million euros per year can be saved by reducing the number of avoidable hospital stays to V3 level in a 5-year period, of which 1.5 million euros in 2020. These savings require an extension of general outpatient care (measure No. 10).

## 23. Outpatient care – reducing the number of specialist visits by broadening the scope of general outpatient care (GOC)

Patients in Slovakia visit their doctor's offices too often, most often of the entire EU, but their treatment outcomes are worse. Slovaks visit specialists excessively, their general practitioner visits are less frequent. This is caused by the fact that part of healthcare provided by specialists in Slovakia is performed by general practitioners with broader competences abroad.

If the number of specialist visits in Slovakia was reduced to V3 level, it would save 207 million euros, of which 20.7 million euros in 2020. Part of specialist visits will be transferred to general practitioners with broader competences in order to even up the number of GOC visits to V3 level. Therefore, this scenario entails savings in SOC and an increase of funding in GOC to V3 level (measure No. 10). However, in order to get to the V3 level, it is necessary to reduce the overall number of doctor visits – some visits are currently completely unnecessary (more in Chapter 5). The saved funds will be reallocated among existing providers and will be used to provide higher salaries, broaden service portfolio or invest according to priorities identified in value-increasing policy measures (No. 10 to 15).

#### **24. Cost-effectiveness of pharmaceuticals**

##### *Establishing rules of cost-effectiveness also for pharmaceuticals for rare diseases and required pharmacoeconomic analysis*

Pharmaceuticals for rare diseases with a prevalence in population of less than 1:50,000 currently have an exceptional status in the system and do not have to prove their value for money at all. As a result, pharmaceuticals with 100x lower effectiveness than is the condition for standard pharmaceuticals are reimbursed from public funds. Although it can be beneficial to give a certain advantage to pharmaceuticals for rare diseases, it is necessary to establish clear rules. At the moment, Slovakia fully reimburses the price of pharmaceuticals whose price has been deemed too high even by countries like Great Britain or Norway. Establishment of clear rules will bring in 2 million euros in 2020 and has an annual savings potential of 10 million euros.

##### *Re-evaluation of payments for pharmaceuticals which do not satisfy the rule of cost-effectiveness*

This policy measure concerns mainly pharmaceuticals which used a temporary gap in the wording of Law No. 363/2011 Coll. in 2018 (Measure 16) and other less cost-effective pharmaceuticals which were introduced into the system before 2011. The wrong wording of the law from 2018 has already been corrected but it still has a negative impact on the budget, amounting to 39 million euros in 2019 and 74 million euros from 2020 onward. Marketing authorisation holders have various options to adjust the prices of pharmaceuticals in order to fulfil the current conditions of sufficient value for money. If they do not manage to do this, these pharmaceuticals should be excluded from the list of reimbursed pharmaceuticals. Patients who are already taking these pharmaceuticals should keep having them reimbursed. The annual savings potential for pharmaceuticals which used the temporary gap in 2018 is 40 million euros, of which 4 million in 2020. Five million euros, of which 2 million euros in the first year, can be saved in case of other pharmaceuticals.

#### **25. Extension of central procurement of pharmaceuticals**

Volume increase of central procurement from the current 13% to 25% would bring in savings of 26 million euros to the PHI. This one-quarter share represents a situation where, for example, only all prescription pharmaceuticals administered in hospitals and doctor's offices (type of reimbursement "A" and "AS") are procured centrally. The example of Denmark shows that this goal is attainable. The measure has a savings potential of 26 million euros, half of which in the first year.

#### **26. Overconsumption of pharmaceuticals – antibiotics**

Prescription of antibiotics when they are not necessary is connected to medical risks and needless financial expenses. Due to high overconsumption of antibiotics, bacteria become resistant to treatment, which puts the entire population at risk, not only the patient who overuses them. Slovak antibiotics consumption is considerably higher than in Sweden which is one of the leaders in this area. Better doctor and patient awareness or compulsory reimbursement of CRP examinations at general practitioners' offices and accident and emergency wards can help reduce the number of prescribed antibiotics significantly. The savings potential of the policy measure is 7 million euros with a 5-year onset (1.4 million in 2020).

## **27. Promotion of introduction of generic pharmaceuticals and biosimilars**

Introduction of cheaper pharmaceuticals into the system requires an adjustment of payments for other interchangeable pharmaceuticals. Since April 2019, there has been an insufficiently justified change of existing practice and the adjustment of payments is currently only carried out 3 months later in some cases. The policy measure has a savings potential of 3 million euros which can be achieved in 2020.

## **28. International price comparison of pharmaceuticals twice a year**

The current legislation allows to compare the prices of pharmaceuticals which were introduced into the system in the last 3 years with prices abroad twice a year. This option has not been used yet even though it can bring in considerable savings. Achievable annual savings of the policy measure are 2.1 million from 2020.

## **29. External referencing**

Slovakia maintains low prices of pharmaceuticals thanks to price comparison with foreign countries. The price of a medication is determined as the average of three lowest prices in Europe. So far however, only the same package sizes have been compared. Pharmaceuticals manufacturers took advantage of this rule in several cases by importing a different package size to Slovakia than to other EU countries and thus avoiding the comparison. For example, an injection medication available in other EU countries as a 1-piece package is imported to Slovakia only in a 10-piece package. However, the price in Slovakia is 20 times higher. Unit price comparison of problematic pharmaceuticals with foreign countries will put a stop to these speculations. The policy measure has an annual savings potential of 4.8 million euros; half of this amount can be achieved in the first year.

## **30. Lower payments for categorised pharmaceuticals in 2019 (introduction of biosimilars and generic pharmaceuticals, external referencing, payment groups)**

In the course of 2019, several changes of payments for categorised pharmaceuticals took place mainly due to the introduction of cheaper pharmaceuticals, international price comparisons and re-evaluation of payment groups. Part of the savings has already reflected in 2019 expenditure, the rest has a positive impact on 2020 budget. These changes saved 34.6 million euros in 2019 and will bring in further 30 million to next year's budget.

## **31. Change of payment groups from January 1, 2020**

From the beginning of the next year, considerable re-evaluation of payments for pharmaceuticals will take place as a result of major changes in payment groups. This change will save 7.9 million euros annually in public health insurance from 2020.

## **32. Policy measure – eHealth**

Expenses on pharmaceuticals are negatively affected by duplicate prescriptions and adverse drug interactions. Implementation of electronic health modules in practice will help with this issue and save 30 million euros in 2020. Relevant modules must be launched in time at the NHIC in order to achieve the savings.

## **33. Uncategorised pharmaceuticals reimbursed in exceptional cases**

Exceptions allow health insurance companies to reimburse their patients for pharmaceuticals which are not officially reimbursed in Slovakia (i.e. categorised). Currently, we do not have unified rules for authorising exceptions, the authorisation process thus remains a question of individual evaluation of health insurance companies.

Amendment of Law No. 363/2011 Coll. (policy change No. 16) was intended to completely cancel exceptional reimbursements for pharmaceuticals and include some of them under categorised pharmaceuticals. Although this amendment introduced pharmaceuticals for 75 million euros into the system without any proof of cost

effectiveness (of which 22 million euros were transferred from exceptional payments), overall expenses of health insurance companies on exceptional payments keep increasing year-on-year. It causes a duplicate increase in expenses and inefficiency in drug policy. Adjustment by volume of transferred pharmaceuticals originally reimbursed in exceptional cases (after taking into account indication variability) will save 16 million euros from 2020.

#### **34. Re-evaluation of payments for CT and MRI procedures compared to Czech prices**

Slovakia pays for some medical procedures from public funds much more generously than the Czech Republic, thanks to which private companies achieve extraordinarily high profit margins. The price re-evaluation has an annual potential of 8.9 million euros, but because of valid past contracts, only 0.3 million will be saved in 2020.

#### **35. Reducing redundant CETU examinations by standards and review activity**

Part of Slovak CETU procedures can be duplicate and thus unhelpful to the patient. For example, Slovak patients undergo considerably more CT and MRI examinations compared to neighbouring V4 countries. Many cases can be seen in the system where one patient underwent at least 5 MRIs or at least 10 CT scans in one year. Setting standard cases when it is not necessary to repeat examinations and more detailed review activity can bring in PHI savings. The measure has a savings potential of 24.6 million euros, of which 12.3 million euros will be achieved in 2021.

#### **36. Laboratory examinations – payments**

Currently, some laboratory examinations are performed even though a cheaper method exists; the payments for selected examinations should amount to the cheapest method available. At the same time, launch of the “e-Lab” module in the e-Health system can help eliminate duplicate examinations in laboratory diagnostics.

#### **37. Central procurement of incontinence products**

Expenditure Optimisation project in Všeobecná zdravotná poisťovňa has estimated a savings potential of central procurement of nappies in VŠZP at 1.7 – 2.6 million euros. Centrally procured nappies can be delivered to bulk purchase sites (for example social service facilities). The measure has a savings potential of 2.2 million euros, of which 1.1 million euros will be achieved in 2020.

#### **38. Incontinence products – implementation of basic functional type**

Savings potential of changes in payment system for selected medical devices amounts to 14 million euros. These savings have been estimated by comparison with the Czech model which has different specifications of payment parameters and also lower consumption. The measure has a three-year onset, savings of 4.7 million euros will be achieved in 2020.

#### **39. Extension of the international price comparison of medical devices**

Similarly to pharmaceuticals, prices of medical devices are compared with foreign countries. However, the prices are compared only to the Czech Republic at the moment due to insufficient interconnection of data to foreign databases. Savings potential can be achieved by extending this comparison to other countries. The measure has a savings potential of 3.8 million euros which will be achieved as soon as in 2020.

#### **40. Standard procedures – improvement of processes in obstetrics**

Slovakia lacks standard diagnostic and treatment procedures based on best practice and up-to-date knowledge. Well-optimised and observed processes improve the quality of care and help avoid wasting resources on

unnecessary procedures. One example can be found in redundant examinations in pregnancy and caesarean sections in case of low-risk pregnancies. Elimination of redundant examinations and reduction of the proportion of C-sections will save 4.2 million euros per year.

#### 41. VŠZP – Better review activity

Indirect reviews represent provider invoice checks; part of these checks is done automatically by the software. Better adjustment and operation of the programme in VŠZP would save 28 million euros total, of which 8 million euros in 2020.

#### 42. VŠZP – More efficient operation

Number of employees of VŠZP has been increasing since 2012 even though their number of insured persons has been dropping. The insurance company currently spends 3 billion euros on healthcare (of which 1 billion euros on pharmaceuticals and devices, the rest goes to providers) and 100 million euros on operation.

**In 2020, these policy measures can reduce the operational expenses by 4 million euros with a prospect of further reduction by 15 million euros in the next three years.** Policy measures such as reducing the scope of services in branch offices (for example by creating an e-office), optimisation of support activities, cancelling rent of underused buildings, better adjustment of branch sizes, optimisation of telecommunication services contracts or insourcing some activities and processes can make the operation of the insurance company more efficient.

**In order to streamline the management of the biggest health insurance company, VŠZP has undergone an optimisation project<sup>9</sup>.** Policy measures with a potential of 128 million euros have been identified, of which policy measures for 28 million euros can be implemented in the first year. Measures 41 and 42 concern VŠZP specifically, other measures for a total of 16 million euros are mentioned under other items in table 7.

As in the entire healthcare spending review, the goal is to use the freed up funds in areas with the highest potential to improve healthcare outcomes. Performance of the plan is monitored by the Implementation Unit of the Government Office of the SR.

### 3.4 Expenses beyond PHI

**Table 8: Policy measures – expenditure changes beyond PHI compared to 2019 – hospitals (in million euros)**

No.	2020	2021	2022	Potential	Implementation period in years
<b>Total</b>	<b>56.1</b>	<b>80</b>	<b>80</b>	<b>-18</b>	
43 Operational expenditure of hospitals	-3.1	-6.1	-6.1	-6.1	2
<b>Special medical material (SMM)</b>					
44 Extension of the international price comparison	-4.2	-4.2	-4.2	-4.2	1
45 Creation of basic functional type	-2.0	-4.0	-4.0	-4.0	2
46 Payment amounting to the cheapest procurement price for hospitals	-3.7	-3.7	-3.7	-3.7	1
47 Hospitals – capital expenditure (not included in PHI expenses)	69	98	98		

<sup>9</sup> The project was carried out by BCG company in cooperation with Value for Money Division and Implementation Unit

#### **43. Operational expenditure of hospitals**

It is possible to save 6.1 million euros by optimising unit prices of procured operational services in university hospitals and teaching hospitals. The savings are based on a comparison of hospital contracts and real expenses on electricity, gas, cleaning, catering, washing and security service in 2018.

#### **44. Extension of the international price comparison**

Similarly to medical devices, prices of special medical material are only compared to the Czech Republic in practice. Savings can be achieved by extending this comparison to other countries. The measure has a savings potential of 4.2 million euros which will be achieved as soon as in 2020.

#### **45. Creation of basic functional type (new payment groups)**

Unlike pharmaceuticals, the current division of SMM into groups is insufficiently related to the amount paid. Various types of goods are included in the groups and the maximum amount to be paid in a group often does not correspond to real prices. Creation of payment groups consisting of interchangeable SMM products and determining maximum payment amounting to the cheapest product in the group would increase transparency of pricing and patient entitlement. The measure has a savings potential of 4 million euros, of which 2 million euros will be achieved in 2020.

#### **46. Payment amounting to the cheapest procurement price for hospitals**

Hospitals procure SMM on their own and get a reimbursement from health insurance companies when it is used in patient care. If health insurance company reimbursement was set to the cheapest procurement price, it would encourage hospitals to purchase efficiently. The measure has a savings potential of 3.7 million euros which will be achieved from 2020 onward.

#### **47. Hospitals – capital expenditure (not included in PHI expenses)**

Hospitals will get 69 million euros per year allocated to capital expenditure, particularly to building renovations and instrument modernisation. This effort will contribute to the continuous endeavour to resolve the long-neglected investment debt of hospitals. To maximise the use of these funds, it is necessary to invest them according to the approved strategy of hospital network stratification (Chapter 4.3) and publicly report the investments. Part of the resources will be provided from EU funds.

### **3.5 Unquantified measures and structural measures**

**Policy measures without specified financial impact and structural measures without direct financial impact have a considerable potential for efficiency improvement.** These measures stem from recommendations stated in relevant chapters of the review and correspond to quantified measures in Chapter 3.2 to 3.4. These measures include<sup>10</sup>:

- **Hospital network stratification** focusing on quality improvement by required minimum number of procedures and effectiveness improvement by shorter hospital stays and fewer hospital beds (Chapter 4.3).
- **Re-evaluation of the relative weights of DRG and implementation of payments to hospitals based on DRG** (Chapter 4.5).
- **Improvement of risk equalisation mechanism** by implementing new parameters and ex-post redistribution (Chapter 13.2.2).
- **Definition of basic healthcare package** (Chapter 13.1.1).

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<sup>10</sup> Policy measures from this review are summarised in Tables 6, 7 and 8, in Chapter 3.5 and in the rest of the paper in separate boxes.



- **In outpatient care**, support of gatekeeping before general practitioner visit (reduction of “administrative” visits, phone consultation instead of visit, home treatment of viral infections), re-evaluation of funding mechanism of doctor’s offices (capitation and payment per procedure), simpler entry of general practitioners into the market and promotion of establishment of integrated general outpatient care centres (Chapters 5 and 11).
- **In drug policy**, strengthening capacities for cost-effectiveness analysis (health technology assessment, HTA), promotion of further introduction of generic pharmaceuticals, strengthening awareness campaign about unnecessary OOP for pharmaceuticals, re-evaluation of payment groups and improvement of competitive environment in central procurement (Chapter 6).
- **Re-evaluation of staff remuneration in hospitals – so-called automatic salary increase mechanism** – connecting the increase of the salary package to average salary and giving hospitals the flexibility to redistribute (Chapter 11.1).
- **In order to optimise selected operational expenses of hospitals**, unification of parameters of procurement contracts of state hospitals for better comparability, benchmarking the prices of services in healthcare and public administration every 6 months and concluding contracts for at least one year.
- **As for staff policy measures**, re-evaluation of the staff mix and their competences in all facilities (Chapters 5 and 11).
- **In standard diagnostic and treatment procedures**, acceleration of the approval process of the SDTPs. According to a case study in this review, implementation of SDTPs in pregnancy and labour, earlier release of mothers and children from the hospital, creation of capacities in home care and community care for mothers and children (Chapter 12).
- **For health insurance companies**, setting rules for the use of PHI resources which have not been used for healthcare (Chapter 13.2.1).
- **Establishment of rules for patient out-of-pocket payments** (Chapter 2.2).
- **Extension of data collection by most frequent situations when patient has to wait** for healthcare.
- **As for prevention**, investment in effective preventive policy measures and health promotion (Chapter 15).
- **In mental health**, epidemiology research, removal of barriers preventing inclusion of psychotherapists in healthcare, promotion of psychotherapy, setting correct processes for prescribing pharmaceuticals, integration of psychological symptoms in physical disease diagnostics (Chapter 16).

### 3.6 Better budgeting

The HC spending review identifies three main budgeting tools which will allow for a more efficient move towards fulfilling the targets in Slovak healthcare system while maintaining the current volume of expenses:

1. **performance-based budgeting**
2. **change in the manner of funding**
3. **quantification of all healthcare policy measures, both value-increasing and cost-reducing**, which can help achieve the set goals in individual areas of healthcare

#### 3.6.1 Programme-based budgeting

**Performance-based budgeting in the form of programme-based budgeting will be implemented from 2020.**

Performance-based budgeting is a modern system of public expenditure management used in practice by more than two thirds of OECD countries (OECD, 2017b). It is considered more useful than the formerly used system which only allocates money to expense categories in terms of accounting practice, for example salaries and

goods, and monitors their use (so-called line-item budgeting) (OECD, 2007). **Programme-based budgeting is the most common tool countries use to implement performance-based budgeting.**

**Box 2: The principle of programme-based budgeting**

1. First of all, sector is divided into strategic areas, so-called programmes. The programmes are determined according to priorities and meaningfulness.
2. Specific indicators to be monitored by the state are defined for each programme, as well as goals to be achieved and inputs and resources allocated in order to fulfil these goals.
3. Subsequently, it is assessed whether the actual outcomes approximate the targets and how are the allocated resources used. This information serves as the input for budgeting and goal-setting for the following period. Therefore, it is a tool for discussion about resource allocation. Outcome indicators serve as the basis for decision-making.

Experience in OECD countries<sup>11</sup> has shown several advantages of performance-based budgeting and programme-based budgeting:

- It provides structured information about the goals and priorities in the sector and determines the policy measure through which they will be achieved
- Focuses attention on outcomes, signals whether policy measures are working
- Allows for more efficient resource allocation
- Improves transparency for legislators and for the public

The disadvantages of the system arise from its complexity. Countries face several problematic issues:

- How to correctly interconnect resources, inputs and outcomes and set goals
- How to improve outcome measurements
- How to ensure adhering to the plans
- How best to use the information about outcomes for budgeting and further policy planning

Thanks to the aforementioned advantages, performance-based budgeting is used in the majority of OECD countries.

**Programme-based budgeting was implemented in Slovakia in 2004 as a part of public finance management reform.** State budget and territorial self-administration expenses were divided into programmes. However, programme-based budgeting lacked the basic prerequisites, i.e. capacities at ministries and public discussion on the outcomes. Indicators assigned to the programmes were only formal, usually just input or output indicators, they did not reflect the outcomes and provided only minimal added value in decision-making. Due to these reasons, they were left out of the published budget documentation in 2011.

**Programme-based budgeting in healthcare was implemented only for expenses of the Ministry of Health department which fall under the state budget.**<sup>12</sup> Instead of outcome indicators, the Ministry only assesses the amount of money from the budget used for various items, such as salaries or capital expenditure.

**However, public health insurance (PHI) has not been included in the change and programme-based budgeting has not been implemented in this area yet.**<sup>13</sup> That said, the expenses pertaining to PHI are approximately 30 times higher than the expenses of the Ministry of Health.

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<sup>12</sup> Budget programmes of the MoH: Prevention and Health Protection, Healthcare, Policy-making and Implementation, Implementation of WHO International Health Regulations and Information Technologies Financed by the State Budget.

<sup>13</sup> At the time of programme-based budgeting implementation, valid legislation did not plan to include public administration bodies.

Until 2017, PHI resources were formally budgeted as one big package of money unrelated to needs and outcomes of healthcare. The resources are afterwards paid by health insurance companies to contracted providers according to the volume of healthcare provided to insured persons.

**The review recommends to implement programme-based budgeting in public health insurance as well. As for the structure, we suggest creating programmes according to healthcare areas along with clearly set indicators and goals.** Table 9 states the PHI expenses in suggested programme structure and Table 10 shows an example of the Inpatient Care programme. The success rate of programme-based budgeting depends on the fulfilment of systemic policy measures which will ensure that the budget is binding for all health insurance companies and set a clearly defined post of a regulator.

**Table 9: PHI expenses in programme structure (in million euros)**

million euros	2017 AE	2018 AE	2019 B	2019 EE	2020 BP
<b>Healthcare</b>	<b>4,341</b>	<b>4,564</b>	<b>4,704</b>	<b>4,931</b>	<b>5,168</b>
Pharmaceuticals and dietetic food	1,070	1,066	1,069	1,085	1,039
Medical devices	188	170	190	173	164
Inpatient care (beds)	1,276	1,312	1,466	1,508	1,642
GOC	235	256	256	290	317
CETU*	495	541	527	578	600
SOC	809	882	877	929	996
Emergency first aid service	16	20	17	25	26
Rescue service	87	94	96	111	131
Spa care	52	54	56	55	59
Transport	26	27	27	32	33
Helicopter rescue service	11	11	12	11	12
Other subjects and HC	76	130	111	135	147
<b>Other PHI expenses</b>	<b>198</b>	<b>222</b>	<b>227</b>	<b>236</b>	<b>251</b>
<b>PHI total</b> (other payments and transactions not included)	<b>4,539</b>	<b>4,786</b>	<b>4,931</b>	<b>5,167</b>	<b>5,418</b>

\*Common examination and treatment units (CT, MRI and laboratory examinations), AE – actual expenditure, EE – expected expenditure, B – budget, BP – budget proposal

**Table 10: Example of programme structure – Inpatient Care programme**

Programme	Inpatient Care	Year X		Year X+1	
		Plan	Reality	Plan	Reality
<b>Goals</b>	Quality increase of provided healthcare by 5% via concentration of procedures Shorter hospital stays according to approved hospital network stratification				
<b>Tools</b>	Hospital network stratification (Chapter 4.3) Adjustment of the manner of staff remuneration				
<b>Measurable indicators</b>	Total expenditure on inpatient care in million euros	...	...	...	...
	EBITDA in million euros	...	...	...	...
	Overdue obligations in million euros	...	...	...	...
	Average length of stay in days	...	...	...	...
	Number of doctors (per 1,000 citizens)	...	...	...	...
	Number of nurses (per 1,000 citizens)	...	...	...	...
	Capital expenditure in million euros	...	...	...	...

Source: Value for Money and Implementation Unit

### 3.6.2 Change in the manner of funding – contributions from economically active persons (EAP) and state payments

**Up to now, total healthcare package has not depended on the needs of the sector but on the performance of the Slovak economy.** It is because a major part of public health insurance is funded by contributions paid by economically active insured persons and state payments for economically inactive insured persons (so-called state-insured persons, for example children, students, the retired).<sup>14</sup> State payment for state-insured persons is an expense of the Ministry of Health and has depended on the average salary so far.<sup>15</sup>

**A change in the manner of healthcare funding will take place in 2020. The budget will reflect total necessary healthcare expenditure.** In compliance with the principle of value for money and performance-based budgeting, it is important that goal-setting is done in accordance with the decision-making about the size of the package. Goals must correspond to budget limits and the budget should reflect the needs and goals of the sector.

First of all, total expected healthcare expenditure is determined and the amount of contributions collected by health insurance companies from the EAP is estimated. The amount of annual insurance premium paid by the state is afterwards determined as the difference between the expected expenditure and income from the EAP. The annual sum of insurance premium paid by the state will be set by the Law on State Budget and will no longer depend on average salary.

**Determination of necessary expenses will increase transparency in budgeting.** It is essential to quantify influences such as inflation, salary increase and population ageing which take place without any changes in policy measures introduced by the sector. This ensures that healthcare expenditure corresponds to economic and demographic development. Subsequently, it is possible to add changes stemming from new legislation and possible savings in the sector. Such a process can help prevent underfunding of the sector, ensure necessary funding even in worse economic situation and also help prevent unchecked increase in spending, which has happened in several developed countries.

**The purpose of state payment is to bridge the revenue gap and it has a valid place in a solidary system where contributions from the EAP cannot cover all healthcare expenses for all citizens.** Therefore, additional healthcare funding by the state can be legitimate for example if less money is collected from contributions than expected when the budget was approved.

**In worse case scenario, the state provides additional funding to healthcare because budget funds were not allocated by health insurance companies as planned.** After a budget is created, the resource package is divided among health insurance companies which are free to choose how they buy healthcare from providers. This can lead to a situation where, for instance, the budget increases funding of hospitals, but health insurance company chooses to buy more healthcare from specialists or laboratories instead, which has not been taken into account in the budget and company business plan. As a result, hospitals lack these funds and the state has to provide them. **This kind of additional funding is inefficient and biases motivation for proper use of funds as allocated in the budget.**

**Health insurance companies' allocation of funds according to the budget plan is also necessary in order for the programme-based budgeting in public health insurance to work properly.**

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<sup>14</sup> State-insured person is defined in Law No. 580/2004 on Health Insurance.

<sup>15</sup> The payment is usually determined as 4% of the basis of assessment, i.e. average salary from two years ago (Law No. 580/2004 Coll.). Whether a 4% rate is sufficient has been discussed repeatedly and the rate has been adjusted several times.

### 3.7 Budget and actual expenses in 2019

**In 2019, healthcare expenditure will be 235 million euros higher than planned in the budget.** Part of this difference can be accounted for by the change of basis in 2018 which served as the basis for 2019 budget – actual expenses in 2018 were 74 million euros higher than expected in the budget (Table 11).

**Policy measures proposed by Value for Money identified in the Interim Healthcare Spending Review which had been accounted for in the 2019 budget as well were fulfilled only partially.** According to the plan, expenses on medical staff salaries were increased by additional 82 million euros beyond automatic salary increase mechanism. At the moment, it is not possible to determine how much screening expenses have increased. Savings on pharmaceuticals amounting to 88 million euros have not been achieved (Table 13 and Table 14). Other policy changes in the budget have been almost fulfilled overall, more expenses were allocated to long-term care and protective limit for out-of-pocket payments for pharmaceuticals, less to the impact of the amendment of Law No. 363/2011 Coll. on Pharmaceuticals.

**New budget requirements amounting to 76 million euros arose in the course of the year,** mainly due to higher expenses on pharmaceuticals, CETU, ambulances and outpatient care. Recreational vouchers will cost additional 10 million euros. At the same time, there have been savings in expenses on pharmaceuticals thanks to change of payment groups, introduction of new generic and biosimilar pharmaceuticals and price referencing (Table 15). Other PHI expenses have increased considerably compared to the budget (Table 12)<sup>16</sup>. New budget requirements and change of basis for 2019 were completely covered by additional funding in 2019.

**Table 11: Total PHI expenses (in million euros)**

	Budget 2019*	Expected expenditure 2019	Difference
<b>Total PHI expenses</b>	<b>4,931</b>	<b>5,167</b>	<b>235</b>
Basis (2018 expenses except one-time items)	4,712	4,786	74

\*approved by the Government of the SR, further 55 million euros were added after negotiations of the National Council of the SR

**Table 12: Expenditure changes – PHI – no-policy-change (in million euros)**

	Budget 2019	Expected expenditure 2019	Difference
<b>Total</b>	<b>131</b>	<b>162</b>	<b>30</b>
<b>Non-salary expenditure (increase by CPI)</b>	<b>29</b>	<b>29</b>	<b>0</b>
<b>Salary expenditure</b>	<b>96</b>	<b>96</b>	<b>0</b>
Automatic salary increase mechanism for doctors in inpatient care	23	23	0
Automatic salary increase mechanism for other staff in inpatient care + MP	36	36	0
Non-medical staff	9	9	0
Healthcare professionals in outpatient care	28	28	0
<b>Other PHI expenses</b>	<b>-17</b>	<b>14</b>	<b>31</b>
Health insurance company administration, contributions to HCSA, Emergency Control Centre, NHIC, principal sum repayment (Dôvera)	-17	14	31
Population ageing	23	23	0

<sup>16</sup> The increase is primarily caused by debt repayment by Dôvera health insurance company.

**Table 13: Expenditure changes – PHI – Value for Money policy changes (in million euros)**

	Budget 2019	Expected expenditure 2019	Difference
<b>Total</b>	<b>180</b>	<b>172</b>	<b>-9</b>
<b>Value-increasing policy measures – Value for Money</b>	<b>87</b>	<b>82</b>	<b>-5</b>
Prevention – screenings	5	N/A	N/A
Change in funding of X-ray imaging	5	5	0
Salary increase of paramedical staff in inpatient care	59	59	0
Salary increase of paramedical staff in outpatient care	18	18	0
Contracting new CETU providers	0	0	0
<b>Other policy changes</b>	<b>93</b>	<b>90</b>	<b>-4</b>
Long-term care	N/A	5	5
Rescue service – lump fees	1	1	0
Emergency service – lump fees	7	6	-1
Increase in treatment abroad	3	3	0
Pharmaceuticals – amendment of 363/2011 Coll.	56	42	-14
Additional funding of doctor's offices related to e-Health and bonuses for its use	2	2	0
Protective limit for OOP*	0	7	7
Increase in surcharges for night, weekend and holiday work	24	24	0
Additional funding of hospitals by VŠZP	0	0	0

**Table 14: Expenditure changes – PHI – cost-saving policy measures – Value for Money (in million euros)**

	Budget 2019	Expected expenditure 2019	Difference
<b>Total</b>	<b>-92</b>	<b>-4</b>	<b>88</b>
Pharmaceuticals – prescription variability, impact of e-prescription	-30	0	30
Review of payments for categorised pharmaceuticals	-50	0	50
Pharmaceuticals reimbursed in exceptional cases – establishment of rules for reimbursement*	-8	0	8
Medical devices – external referencing and review activity*	-4	-4	0

\*Different from the version approved by the Government of the SR

**Table 15: New budget items and savings not included in PHI budget (in million euros)**

	Budget 2019	Expected expenditure 2019	Difference
<b>Total</b>	<b>0</b>	<b>76</b>	<b>76</b>
Recreational vouchers	0	10	10
Rescue service staff – higher coefficients	0	17	17
Spa limits	0	1	1
Higher energy prices for hospitals	0	3	3
Lower payments for categorised pharmaceuticals in 2019 (introduction of biosimilars and generic pharmaceuticals, external referencing, payment groups)	0	-35	-35
Higher expenses on pharmaceuticals	0	22	22
Additional funding of inpatient care due to inefficient global budgets and contract policy	0	4	4
Additional funding of outpatient care (over-the-limit and increased payments)	0	10	10
Increase in one-day healthcare (limits and transfers of physician-administered pharmaceuticals)	0	16	16
Increase in CETU payments	0	23	23
Additional funding of patient transport service	0	4	4

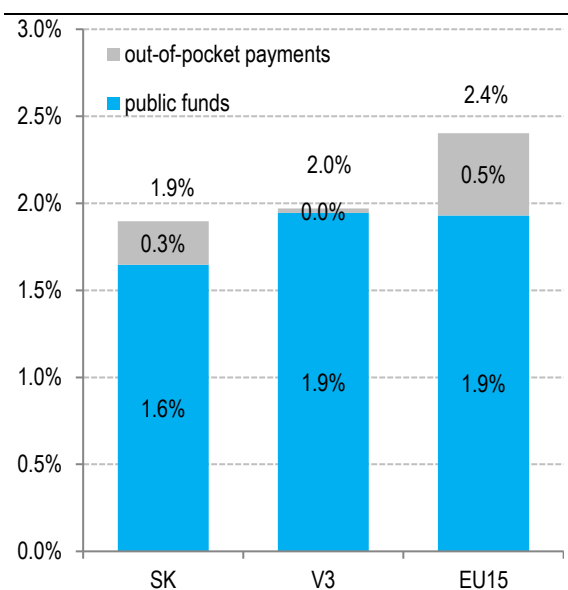
## 4 Inpatient care

### 4.1 Inpatient care expenditure

**Slovakia dedicates 1.9% of GDP to inpatient care, which is a little less than V3 countries (2%) and considerably less than rich countries (2.4%)** (Graph 18). This corresponds to the tendency of healthcare expenditure to increase when the national wealth grows.

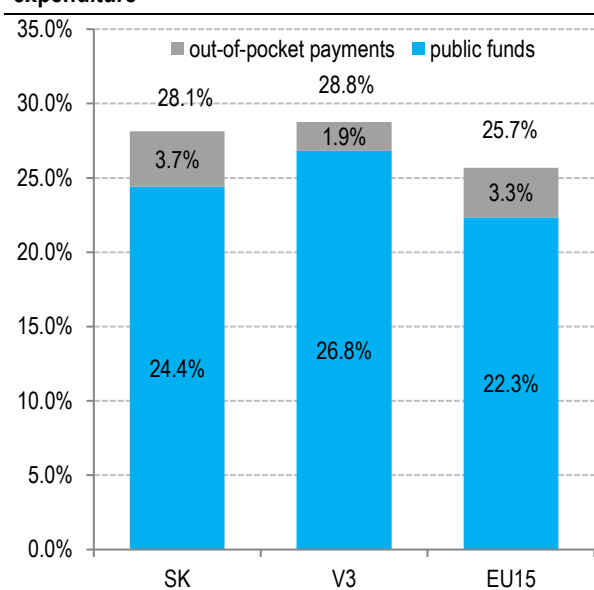
**Smaller portion of the total Slovak healthcare package is allocated to hospitals than in V3 countries, but the portion is larger than in EU15 countries** (Graph 19). Hence, developed countries with better outcomes dedicate more money to inpatient care overall, but they invest even more in other areas with higher priority, for example primary care, long-term care and prevention.

**Graph 18: Inpatient care expenditure, % of GDP**



Source: OECD

**Graph 19: Inpatient care expenditure, % of healthcare expenditure**

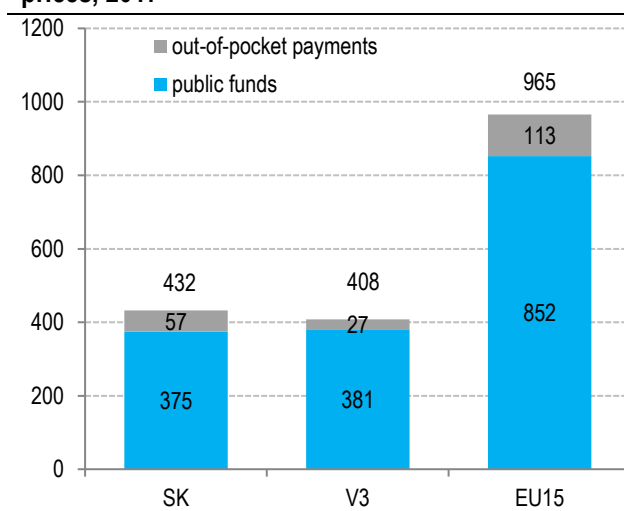


Source: OECD

**Considering the efficiency of the system and purchasing power, Slovakia allocates a little more resources to inpatient care than its neighbours, but much less than EU15 countries.** The effectiveness of inpatient care can be measured as a total number of days patients spent on hospital beds – fewer days usually mean higher effectiveness. The number of bed-days consists of the number of hospital stays and the length of stay. High number of hospital stays can be related to different morbidity rate but also to less effective preventive and primary care system. Long hospital stays reflect bad patient management, inappropriate medical processes and insufficiently developed follow-up, community and home care. **Slovakia spends more than 400 dollars per one bed-day in purchasing power parity, whereas EU15 countries spend almost 1,000 dollars** (Graph 20). Much higher expenses in EU15 countries even after adjusting by purchasing power parity can be explained by better hospital equipment, higher staff numbers or higher economic status of the staff in the society.

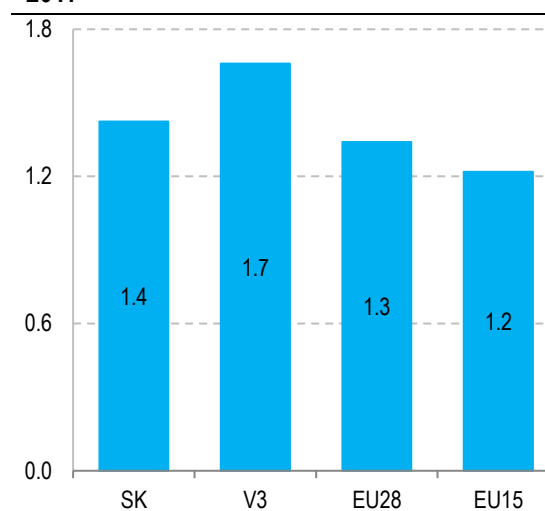
**In the long term, it is necessary to increase resources in inpatient care along with the increase in total healthcare package (according to the growth of national wealth and ageing), but not to increase its portion in the package at the expense of other areas. Resources have to be saved by better adjustment of the system** (Chapter 4.3). However, increases in the short term can be legitimate, particularly in the form of capital investments.

**Graph 20: Expenses per 1 bed-day, going PPP prices, 2017**



Source: OECD

**Graph 21: Number of bed-days per 1 citizen, 2017**



Source: OECD

## 4.2 Quality, accessibility and effectiveness of inpatient care

**Major differences in provided healthcare quality exist among Slovak hospitals in terms of mortality, re-operation rate and re-hospitalisation rate of patients.** As mentioned in the interim report of the 2018 Review<sup>17</sup>, approximately 0.1% of patients die within 30 days after being released from some hospitals, while the percentage in other hospitals with comparable diagnoses is 4%. **Inpatient care is geographically very well available for patients;** 87% of the population can get to the nearest hospital in 30 minutes, 99% can get there in 60 minutes. Reliable data on time availability, i.e. waiting time for individual interventions, is not available at the moment. The quality of hospitals can be measured also by incidence of infections acquired during hospital stays (nosocomial infections), however, their reporting is not reliable at the moment.

**The current system is inefficient compared to western European countries.**<sup>18</sup> Analysis performed for the upcoming hospital reform has shown that average length of stay is 22% higher and bed occupancy is 10% lower. What is more, due to population ageing and factors impacting healthcare<sup>19</sup>, the demand for inpatient care will increase almost by 18% by 2030, which will only augment the expenditure and burden on the staff in the current system.<sup>20</sup>

## 4.3 Inpatient care reform – Hospital network stratification

**The Ministry of Health prepared an inpatient care reform in 2018, the so-called hospital network stratification, with the intention to significantly improve inpatient care by 2030.**

Draft reform is based on the Study on Hospital Network Stratification conducted by the Ministry of Health in 2017.

<sup>17</sup> <https://www.finance.gov.sk/files/archiv/uhp/3370/76/Revizia-vydavkov-zdravotnictvo-II.pdf>

<sup>18</sup> Compared countries – number of hospital stays: Germany, Austria, France, Finland, Sweden, Denmark, The Netherlands; average length of stay: Denmark, Sweden, The Netherlands, Norway, Great Britain, Italy; bed occupancy: Great Britain, Norway, Germany, Sweden, Italy, France, Austria; number of doctors and nurses: Germany, France, The Netherlands, Austria, Norway.

<sup>19</sup> For instance, increased resistance to antibiotics, more organ transplants thanks to bioengineering, risks related to older primiparas.

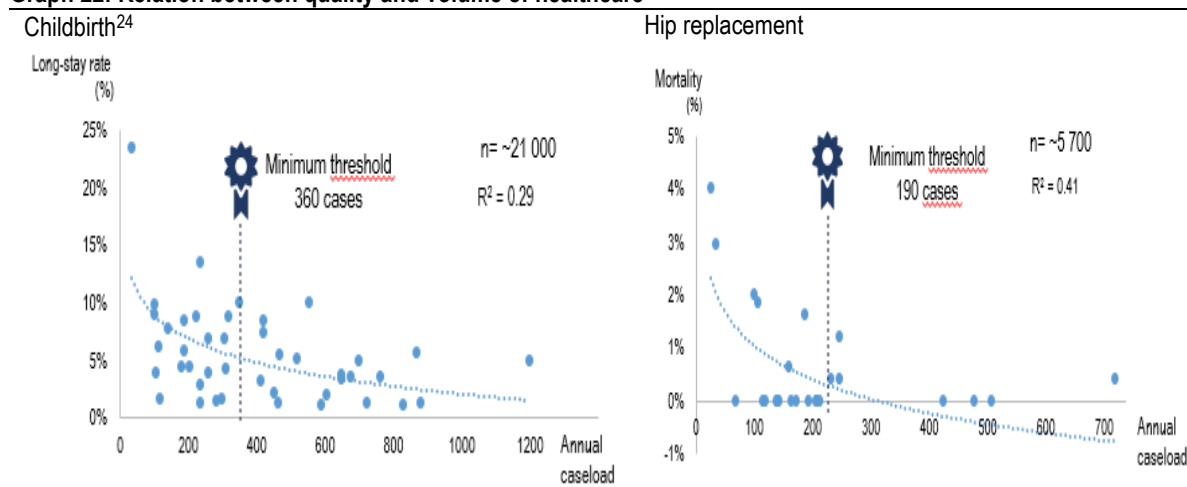
<sup>20</sup> The data differ from the results of the healthcare spending review and salary review analyses conducted by the VfM Division. It is caused by Slovakia being compared to other groups of countries, usually richer ones with higher overall healthcare expenditure.



**The quality of healthcare procedures increases with their frequency within a facility.** The association of volume and quality of healthcare has been shown by internal comparison of Slovak hospitals<sup>21</sup> and foreign research.<sup>22</sup> It is because healthcare staff becomes more skilled and experienced after performing a higher number of procedures. Additional specialties and suitable equipment are also used better.

**Slovak hospitals will thus get the authorisation to provide a specific specialty only if they achieve a specific minimal volume of procedures.** According to the original preliminary study, a hospital could perform e.g. childbirths only if the annual volume surpasses 640, in case of hip replacements, the annual volume should be higher than 190.<sup>23</sup> The study has identified minimal volumes of procedures based on the literature or regulations in Austria, Germany and USA, however, only for a limited group of procedures so far.

**Graph 22: Relation between quality and volume of healthcare**



Source: Study on Hospital Network Stratification of the Ministry of Health

Another example can be found in the outputs of a joint project of the MoH and World Bank “Minimal Volume Thresholds” which similarly focused on a comparison of volumes of individual procedures among providers. At the same time, volumes were compared via survey conducted by Leapfrog Group, which identified **minimal volumes based on data collection in several countries.**

<sup>21</sup> The comparison was carried out by BCG. It monitored seven procedures (pancreatic surgery, gall bladder surgery, large bowel resection, rectal resection, rectal surgery, total hip replacement, childbirth) in all hospitals with available data. The analysis was adjusted by the difficulty of patient cases in individual hospitals via case-mix index.

<sup>22</sup> For example, Chowdhury et al. (2007). “A systematic review of the impact of volume of surgery and specialization on patient outcome”. Halm et al. (2002). “Is volume related to outcome in health care? A systematic review and methodologic critique of the literature.”

<sup>23</sup> The threshold for minimal volume of procedures has been determined based on the methodology in Nimptsch & Mansky (2017). “Hospital volume and mortality for 25 types of inpatient treatment in German hospitals: observational study using complete national data from 2009 to 2014.” BMJ open 7.9.

<sup>24</sup> BCG in cooperation with experts has defined excessively long hospital stay as 9 days and more.

**Table 16: Overview of minimal volumes of selected procedures according to Leapfrog Group**

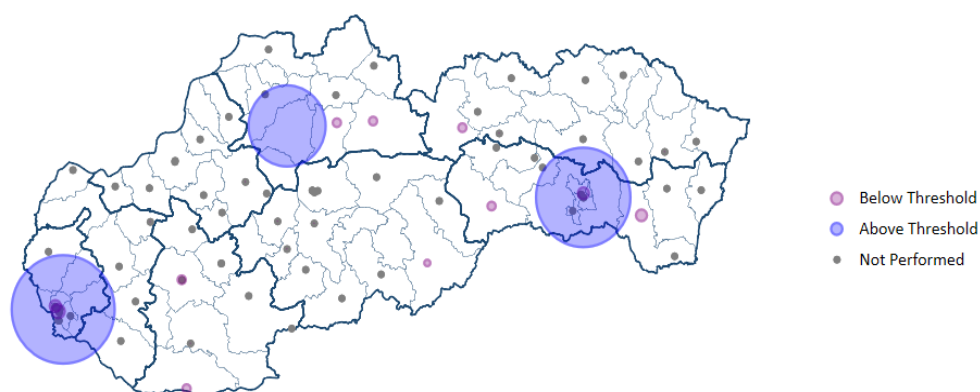
Procedure	Minimal volume (the Leapfrog Group)	Minimal volume (Other countries)
Resection – oesophageal cancer	20	10 (Germany) 20 (The Netherlands)
Surgery – rectal cancer	16	
Surgery – pancreatic cancer	20	10 (Germany) 20 (The Netherlands)
Surgery – lung cancer	40	20 (The Netherlands)

Source: Joint study of MoH SR and World Bank – Minimal Volume Threshold

The study also includes the need to ensure **regional availability and centralisation**. Regional centralisation of some procedures is an essential condition in order to ensure sufficient amount of necessary resources.

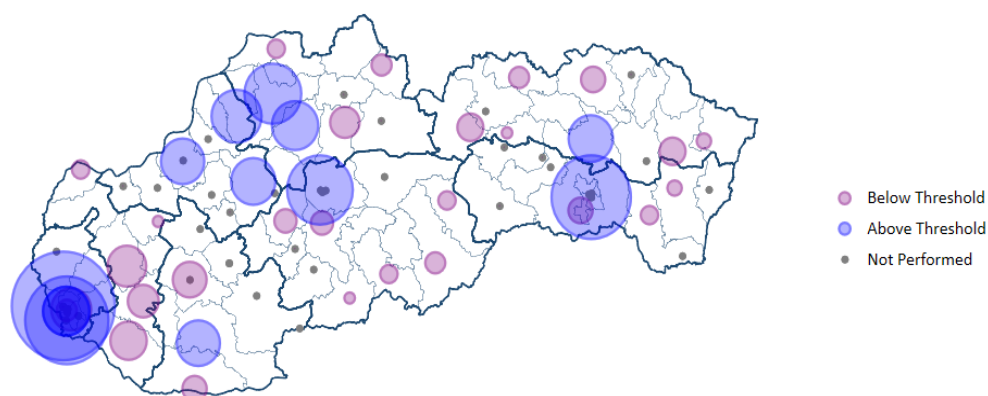
The maps below show current volumes of specific procedures. It is clear that without additional centralisation, it will not be possible to achieve sufficient volumes of procedures and subsequently ensure overall increase in quality. Some procedures are centralised already (as indicated on the map – lung cancer surgery), however, this concerns procedures which require special equipment and therefore are not profitable for smaller hospitals.

**Map 1: Lung cancer surgery**



Source: MoH SR

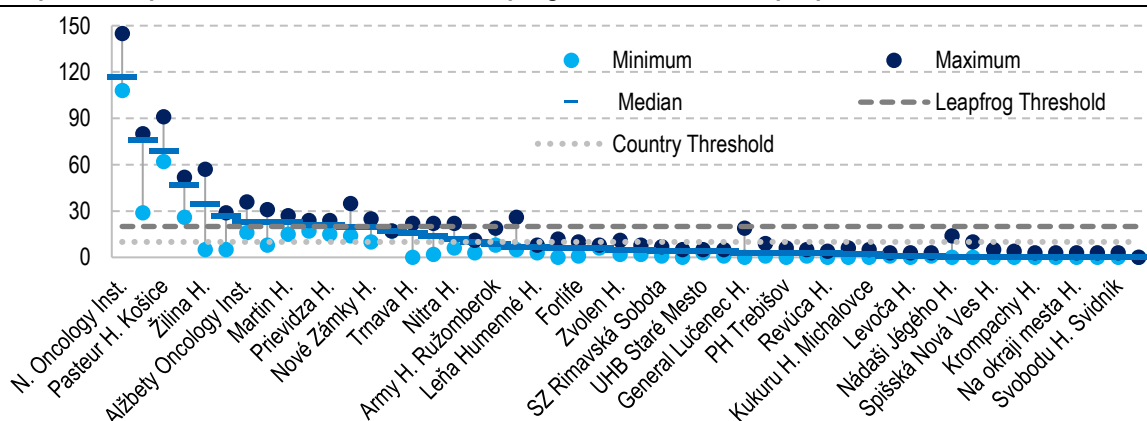
## Map 2: Oesophageal resection



Source: MoH SR

However, in the majority of cases, procedures (and thus resources) are not centralised. The graph below shows the number of oesophageal resections per individual providers. **The majority of providers do not satisfy the required minimal volumes even in terms of the current standards in the SR; comparison with international threshold shows even bigger divergence.** The draft reform of hospital network approved by the government in September 2019 was based on the aforementioned statistics and included 28 procedure groups with defined minimal volumes which were decided upon consultation with expert and practitioners' associations.

**Graph 23: Scope and median of volumes of oesophageal cancer resection per provider, 2014 – 2016**



Note: Leapfrog Threshold – threshold determined by the Leapfrog Group, Country Threshold – threshold determined by the country (Slovakia)

Source: MoH SR

**Hospital network should be adjusted as well.** New local, regional and national hospitals with different difficulty and acuteness of specialties should be established. **The whole inpatient network is planned to be streamlined without negative impact on the accessibility for regional patients.** Streamlining of hospitals can lead to a transformation of as much as 5,600 beds, freeing up space and staff capacities as well as medical and operational resources. These can then be better used in outpatient care, one-day surgery, transportation service and particularly in long-term care, the demand for which will be considerably higher in the following years due to population ageing.

**Table 17: Division of hospitals according to level of HC – first suggestion from the study**

Level of HC	Basic HC	Regional HC	National HC
Type of hospital			
<b>Local hospital</b>	must provide	may provide if standards are met	cannot provide
<b>Regional hospital</b>	must provide but on a relatively smaller scale	must provide at least one specialty	may provide if standards are met
<b>National hospital</b>	must provide but on a relatively smaller scale	must provide but on a relatively smaller scale	must provide at least one specialty
Geographic distribution	accessible within 30 minutes 45 catchment areas	accessible within 60 minutes 10 catchment areas	accessible within 120 minutes 3 catchment areas

Source: Study on hospital network stratification of the Ministry of Health

**Resources in the hospital system will be used more efficiently mainly due to better patient management and transfer of patients to other areas of healthcare, as well as elimination of unoccupied beds.** Better patient management (e.g. up-to-date medical processes and digitisation of patient data) and transfer of patients (e.g. non-acute chronic patients) to long-term or outpatient care will lead to shorter average length of stay from 8.3 to 6.5 days and fewer days of treatment overall.<sup>25</sup> Along with an increase in bed occupancy from 72% to 80%, the total number of excessive beds will be reduced. Related lower number of days of treatment will free up funds connected to staff, medical material and operation.

**Measure:** Implement hospital reform (stratification).

#### 4.4 Management of the largest hospitals

**Overdue financial obligations of 13 largest hospitals<sup>26</sup> continue to grow.** In 2018, they increased by 10 million euros, which was considerably less than in the previous year, mainly thanks to debt repayment process (in which a large part of the hospital debt is being covered by the state). Without debt repayment, they would increase by 117 million euros.<sup>27</sup> At the current growth rate, the obligations will increase by 79 million euros in 2019, however, this sum includes also debt repayment in 2019 (Table 18). These **obligations increase because the hospitals have repeatedly generated losses for many years<sup>28</sup>.** In order to prevent the debt from growing, it is necessary to ensure that hospitals break even or generate profit.

<sup>25</sup> Number of days of treatment equals the product of number of hospital stays and average length of stay.

<sup>26</sup> University Hospital in Bratislava, L. Pasteur University Hospital in Košice, University Hospital in Martin, Children's Teaching Hospital and Policlinic Bratislava, Children's Teaching Hospital Košice, Children's Teaching Hospital Banská Bystrica, F. D. Roosevelt Teaching Hospital with Policlinic Banská Bystrica, Teaching Hospital in Trnava, Teaching Hospital in Trenčín, J. A. Reiman Teaching Hospital with Policlinic Prešov, Teaching Hospital with Policlinic Žilina, Teaching Hospital in Nitra, Teaching Hospital with Policlinic Nové Zámky.

<sup>27</sup> The concept of debt repayment of healthcare facilities was approved by the government of the SR in 2017.

<sup>28</sup> In 2013 – 2017, economic loss of hospitals explains as much as 60% of new obligations. The remaining 40% of debt increase can be explained by non-operational expenditure, new investments, increase in obligations, assets in bank accounts, reserves and funds which will be provided to hospitals for already performed procedures in the next year (accrued income). These factors also clarify why debt development does not follow the tendency in terms of operational loss.

**Table 18: Obligations of 13 largest hospitals**

	2015	2016	2017	2018	2019 Q1 + Q2	2018 without debt repayment	2019 prediction without debt repayment
due	120	123	128	156	162	156	169
overdue	427	527	646	656	684	763	888
<b>Total</b>	<b>547</b>	<b>650</b>	<b>774</b>	<b>813</b>	<b>846</b>	<b>919</b>	<b>1,057</b>
Increase in overdue obligations		100	119	10	27	117	125

Source: MoH SR data, Implementation Unit, calculations by Value for Money Division

**In 2018, teaching and university hospitals of the MoH achieved positive operating profit EBITDA, but only thanks to one-time debt repayment.** Hospitals in 2018 reported EBITDA of 4.5 million euros which represents an improvement of 81 million euros compared to the previous year. **After clearing the data from the impact of debt repayment, hospital management was the worst out of the last three years.** Repayment of obligations to Social Insurance Agency and other creditors of university and teaching hospitals amounted to 106.7 million euros in 2018. After clearing the data, the operating profit is -103 million euros. All teaching and university hospitals except Teaching Hospital in Nitra have a negative operating income after clearing the data (Graph 24). As part of the debt repayment process, hospitals have adopted revitalisation plans monitored by the MoH.<sup>29</sup>

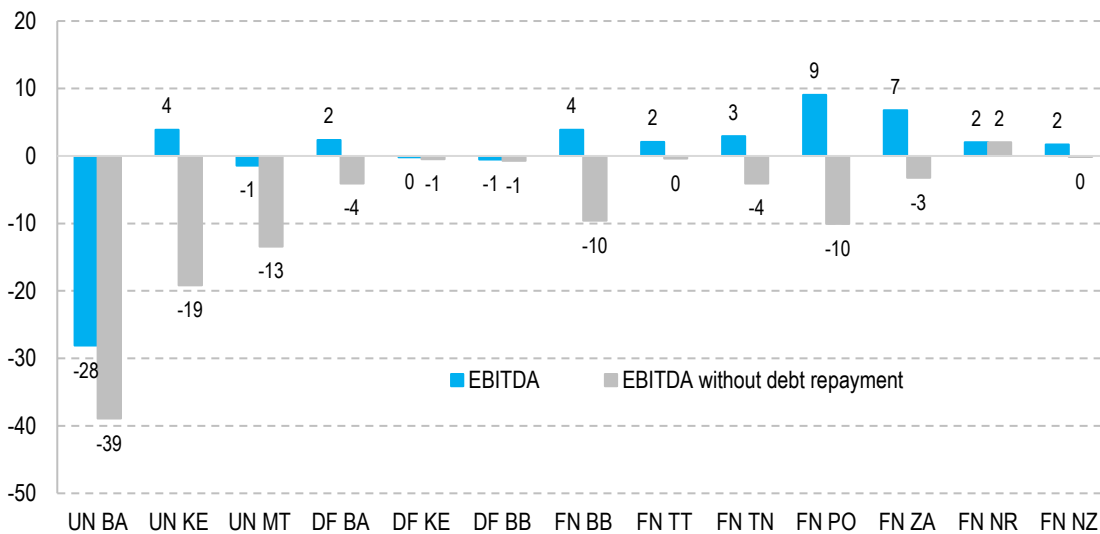
**Table 19: Revenues and expenses of 13 largest hospitals**

	In million euros					Increase			
	2015	2016	2017	2018	2018 without debt repayment	2016	2017	2018	2018 without debt repayment
<b>Revenues total</b>	<b>719</b>	<b>762</b>	<b>784</b>	<b>1,064</b>	<b>852</b>	<b>6%</b>	<b>3%</b>	<b>36%</b>	<b>9%</b>
Other revenues	56	55	63	301	89	-2%	15%	378%	42%
Revenues from HIC	663	707	721	763	763	7%	2%	6%	6%
VšZP	478	513	520	549	549	7%	1%	6%	6%
Dôvera	142	148	156	168	168	4%	5%	8%	8%
Union	43	45	45	46	46	6%	0%	2%	2%
<b>Expenses total</b>	<b>783</b>	<b>843</b>	<b>861</b>	<b>1,060</b>	<b>955</b>	<b>8%</b>	<b>2%</b>	<b>23%</b>	<b>11%</b>
Staff expenses	460	490	513	549	549	7%	5%	7%	7%
Pharmaceuticals and SMM	210	238	229	282	282	13%	-4%	23%	23%
Other expenses	113	115	119	228	123	2%	3%	92%	3%
<b>EBITDA</b>	<b>-64</b>	<b>-81</b>	<b>-77</b>	<b>4</b>	<b>-103</b>	<b>-27%</b>	<b>5%</b>	<b>105%</b>	<b>-33%</b>

Source: MoH, Implementation Unit

<sup>29</sup> <https://ekonomika.sme.sk/c/22205761/nemocnice-by-sa-mali-v-tretom-kole-oddzit-o-takmer-sto-milionov.html>

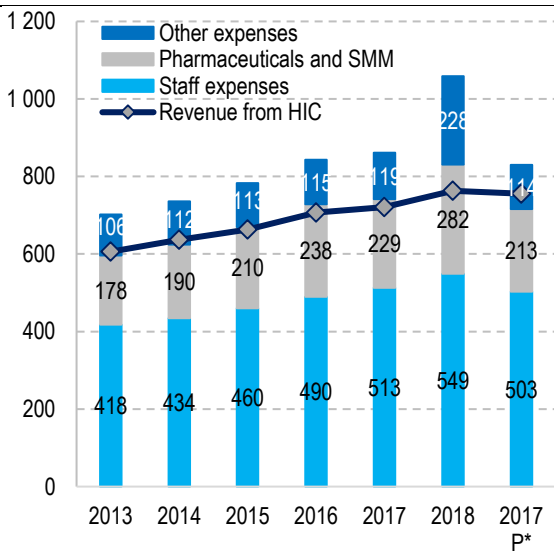
**Graph 24: EBITDA of teaching and university hospitals, 2018**



Source: MoH, Implementation Unit

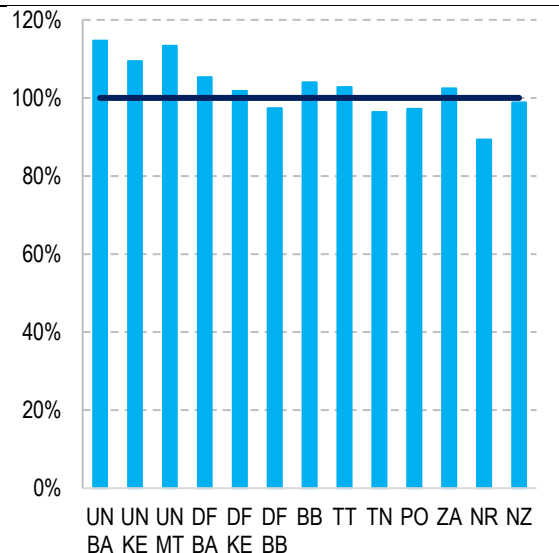
Revenues of hospitals from health insurance companies have not been high enough to cover the hospitals' expenses on staff, pharmaceuticals, blood and medical material for a long time. Even if hospitals had zero expenses on utilities (e.g. electricity, heating, washing), the majority of them still could not cover the expenses on treatment out of public insurance (Graph 25). This problem is most pronounced in University Hospital in Bratislava (UN BA), which has the highest debt, and University Hospital in Martin (UN MT, Graph 26).

**Graph 25: Revenues from health insurance companies and expenses of teaching and university hospitals**



Source: MoH

**Graph 26: Proportion of selected operational expenses\* in revenue from health insurance companies, 2018**



\*Staff expenses, pharmaceuticals, blood, medical material

Source: MoH

**Hospital management can be improved by:**

- **Reduction of medical expenses** – hospital network reform (stratification), individual streamlining of patient management and treatment processes, as illustrated in Chapter 12 on the example of obstetrics

- **Reduction of operational expenditure** – Chapter 4.6 below.
- **Improved functionality of DRG and better reimbursement mechanisms**
- **Increase in revenue from health insurance companies** – e.g. by unification of reimbursements to hospitals for the same case (Chapter 4.7)
- **Increase in revenue beyond health insurance companies** – e.g. letting own premises profitably

**Measure:** Optimise hospital expenditure and improve financial mechanisms.

**Measure:** Allocate capital expenditure amounting to 69 million euros in 2020 and 98 million euros in 2021 – 2022.

## 4.5 System of DRG reimbursements

**Reimbursement mechanism based on DRG (Diagnosis Related Groups) should make hospital management more efficient.** DRG is a tool to group individual patient cases into homogeneous groups in terms of clinical meaningfulness and costs. Homogeneous groups allow to compare the “performance” of healthcare providers. If it is clear what type of cases a hospital manages, it is possible to reimburse them according to standardised price-per case lists and there is no room for special agreements in contracts between individual healthcare providers and health insurance companies. Reimbursement system based on DRG represents payments which are unified for all cases included in a defined diagnostic group, regardless of length of stay or department where the patient was treated. Research shows that in many cases, implementation of reimbursement based on DRG shortened the average length of stay. On the other hand, it is challenging to set the system, price the groups and report the cases correctly (Matthauer & Wittenbecher, 2013). Diagnostic groups in Slovakia are inspired by the German model.

**A five-year process of convergence of individual rates in hospitals began in 2018.** The goal is to achieve complete convergence into one reference base rate valid for all Slovakia. At the moment, DRG is primarily used to report procedures, hospitals are not yet being reimbursed by this mechanism. Health insurance companies still use reimbursement mechanism based on global budgets.

**The main problem at the moment is particularly the obsolete case fee catalogue,** which assigns relative weights to individual diagnostic groups. The current relative weights do not take into account new medical processes and changes in the ratio of individual expense groups – salaries, pharmaceuticals, SMM, procedures. It is necessary to readjust the relative weights of the groups and then re-evaluate the case mix index (CMI) of hospitals and base rates per group.

**However, even full implementation of DRG will not solve financial issues of hospitals, mainly of the large tertiary hospitals.** Tertiary hospitals should provide healthcare for severe and complicated cases, but they also serve as ordinary general hospitals. This arrangement means that the majority of cases are common and an average case in a tertiary hospital is usually similar to hospitals in smaller towns, sometimes even less complicated. For example, an average case in the University Hospital in Bratislava is less complicated than in hospitals in Komárno or Lučenec (Table 20). After DRG rates are completely unified, tertiary hospitals should get reimbursements for inpatient cases similar on average to normal (secondary) hospitals.

Nevertheless, part of the expenses of big hospitals is legitimately higher than in normal hospitals since they employ leading experts and have extra equipment for solving complicated cases. **However, since these hospitals manage many regular cases, it is unclear whether they make use of these top specialists. It can**

thus happen that even though a hospital employs such experts, they cannot be remunerated adequately based on payments per DRG. Some EU countries, such as Belgium<sup>30</sup>, try to solve this problem by multilevel funding, where university hospitals get an additional lump fee for employing top experts and equipment apart from payments per DRG.

**Other flaws of the reimbursement system per DRG abroad are compensated by various innovative payment mechanisms.** An example is “Bundled payments for episodes of care”<sup>31</sup> which include remuneration of physicians and eventually post-op care, follow-up with a specialist etc. In Sweden, this system is used in some interventions (hip replacement, spine surgeries – pre/post-op care) or chronic diseases (diabetes). In Belgium, several facilities are paid lump fees beyond DRG – burn centres, selected centres for specialised nursing care for selected groups of patients or hospitals for patients with low socio-economic status<sup>32</sup>. For more information on reimbursement mechanisms in healthcare, see the Annexes.

**Table 20: Comparison of general hospitals according to case complexity**

	complexity of 1 inpatient case*
<b>Tertiary hospitals</b>	
F. D. Roosevelt Teaching Hospital with Policlinic Banská Bystrica	1.27
University Hospital in Martin	1.26
Teaching Hospital with Policlinic Žilina	1.20
L. Pasteur University Hospital Košice	1.12
J. A. Reiman Teaching Hospital with Policlinic Prešov	1.12
University Hospital in Bratislava	1.10
Teaching Hospital with Policlinic Nové Zámky	1.07
Teaching Hospital in Trnava	0.98
Teaching Hospital in Trenčín	0.98
Hospital in Poprad, a. s.	0.98
Teaching Hospital in Nitra	0.94
<i>Average – tertiary hospitals</i>	<i>1.09</i>
<b>General hospitals with higher or equal complexity as the tertiary hospital with the lowest complexity</b>	
Army General L. Svoboda Hospital Svidník, a. s.	1.74
Hospital in Handlová, a. s.	1.56
Svet zdravia – Hospital in Topoľčany, a. s.	1.44
Hospital in Komárno, s. r. o.	1.12
General Hospital with Policlinic Lučenec, n. o.	1.10
A. Leňo Hospital Humenné, a. s.	1.07
Hospital with Policlinic Ilava, n. o.	1.06
Hospital with Policlinic Považská Bystrica	1.06
Hospital Košice-Šaca, a. s.	1.00
Hospital with Policlinic Kráľovský Chlmec, n. o.	0.99
Railway Hospital and Healthcare Center Košice, s. r. o.	0.98
Regional Hospital in Sobrance, n. o.	0.98
Hospital in Poprad, a. s.	0.98
Nemocničná a. s.	0.96
Lower Orava Hospital with Policlinic, Dolný Kubín	0.95
Hospital in Zlaté Moravce, a. s.	0.94
Hospital in Levice, s. r. o.	0.94
Kysuce Hospital with Policlinic Čadca	0.94

\*total case-mix of a hospital per number of hospital stays

Source: MoH

**Measure:** Implement detailed unified reporting of expenses and update relative weights of individual DRG groups.

<sup>30</sup> [https://kce.fgov.be/sites/default/files/atoms/files/KCE\\_302C\\_Payment\\_methods\\_hospital\\_stays\\_Short\\_Report.pdf](https://kce.fgov.be/sites/default/files/atoms/files/KCE_302C_Payment_methods_hospital_stays_Short_Report.pdf)

<sup>31</sup> OECD. Better Ways to Pay for Health Care (2015)

<sup>32</sup> [https://kce.fgov.be/sites/default/files/atoms/files/KCE\\_302C\\_Payment\\_methods\\_hospital\\_stays\\_Short\\_Report.pdf](https://kce.fgov.be/sites/default/files/atoms/files/KCE_302C_Payment_methods_hospital_stays_Short_Report.pdf)



## 4.6 Optimisation of selected operational (non-medical) expenses

It is possible to save 6.1 million euros by optimising unit prices of procured operational services in university hospitals and teaching hospitals. The savings are based on a comparison of hospital contracts and real expenses on electricity, gas, cleaning, catering, washing and security service in 2018. Analysed services represented 7% of operational expenditure<sup>33</sup> of the 13 monitored university and teaching hospitals in 2018. The biggest savings potential (4.2 million euros) among the analysed services was identified in more efficient cleaning services. Savings potential was identified in connection to unit price optimisation only in university and teaching hospitals and only in healthcare sector, without additional benchmarking against private holding networks or other areas of public and private sector, which would potentially increase the savings. The analysis also does not take into account qualitative evaluation of provided services. The analysis is based on the assumption that if a hospital has concluded a contract following public procurement, it is satisfied with the quality of the service provided.

Expenses of university and teaching hospitals on electricity, gas, cleaning and washing amounting to 27 million euros total have already been analysed in Review I.<sup>34</sup> The resulting recommendation for the MoH SR was to implement a mutual benchmark of operational contract parameters for university and teaching hospitals and adopt policy measures to eliminate unfavourable conditions. Implementation of these policy measures should have saved 3.1 million euros. In reality, the expenses on 4 analysed items increased by 227 thousand euros total between 2015 and 2018. At the same time, the MoH SR has not created a functional tool for mutual comparison of contract parameters of the URPO<sup>35</sup> hospitals by December 31, 2018. Review II. has extended the operational expenditure analysis by catering, security and legal services, which concerned 34 million euros of expenses in the 13 monitored university and teaching hospitals.

**Table 21: Operational expenditure analysis in university and teaching hospitals in Review I. and Review II.**

	Review I.			Review II.			Change of amount of expenses 2015 – 2018 in thousand euros
	Expenses in 2015	Share of operational expenses	Savings Review I. (thousand euros)	Expenses in 2018 (thousand euros)	Share of operational expenses	Savings Review II. (thousand euros)	
<b>Electricity</b>	7,714	2.22%	383	8,534	1.77%	262	820
<b>Gas</b>	6,905	1.99%	462	6,029	1.25%	401	-876
<b>Cleaning</b>	10,097	2.91%	2,138	10,323	2.14%	4,236	226
<b>Washing</b>	2,380	0.69%	145	2,437	0.51%	412	57
<b>Review I. Summary</b>	<b>27,097</b>	<b>7.81%</b>	<b>3,128</b>	x	x	x	x
<b>Catering</b>	5,542	1.60%	x	5,884	1.22%	759	342
<b>Security service</b>	1,031	0.30%	x	654	0.14%	51	-377
<b>Legal service</b>	474	0.14%	x	565	0.12%	=	91
<b>Total</b>	<b>34,143</b>	<b>9.85%</b>	<b>x</b>	<b>34,426</b>	<b>7.15%</b>	<b>6,121</b>	<b>283</b>

Source: Review I, financial statements of university and teaching hospitals for 2018

Network management of university and teaching hospitals, e.g. via holding structure, unit price benchmarking of operational services in the healthcare sector also against selected companies in other public administration sectors every 6 months and concluding operational contracts for at least one year can contribute to better operational management. Object and parameter simplification of procurement contracts for operational services for all university and teaching hospitals will ensure mutual comparability, expenditure optimisation and efficient spending of public resources.

<sup>33</sup> Operational expenses without staff expenses.

<sup>34</sup> <https://www.finance.gov.sk/sk/financie/hodnota-za-peniaze/revizia-vydavkov/revizia-vydavkov.html>

<sup>35</sup> URPO, Úrad pre riadenie podriadených organizácií, is an organisation managing teaching and university hospitals in Slovakia.

The results of the analysis were restricted by availability and poor arrangement of contracts between hospitals and service providers. This problem was already identified in Review I. in 2016. In spite of the three-year period and establishment of the URPO, the problem has not been eliminated.

Some hospitals cater for their operational services themselves (Table 22). The presented savings concern only hospitals which procure the selected services via external contractors. Comparison with hospitals which use their internal employees to cater for the services was not possible due to the absence and poor organisation of internal accounting breakdown for 2018<sup>36</sup>. University and teaching hospitals most often use internal employees for catering (8 out of 13 hospitals). Cleaning and washing services are predominantly outsourced, legal services in hospitals are fully provided by external entities. Regarding security service, there is no predominant manner of procurement – hospitals cater for it themselves approximately in half of the cases.

**Table 22: Provision of selected operational services in university and teaching hospitals (2018)**

	UN BA	UN KE	FN BB	UN MA	FN PO	FN ZA	FN TN	FN NR	FN TT	FN NZ	DF BA	DF KE	DF BB
Share of personnel expenses on non-medical staff	11%	13%	13%	12%	10%	14%	7%	9%	11%	14%	14%	9%	15%
Cleaning	ext	ext	int	int	ext	int	ext	ext	int	ext	ext	ext	int
Catering	int	int	ext	int	int	int	ext	int	ext	int	int	ext	ext
Washing	ext	int	ext	ext	ext	int	ext	ext	ext	int	ext	ext	int
Security service <sup>37</sup>	ext	ext	int/-	int/-	ext	int/-	ext	ext	int/-	int	ext	int	int
Legal services	ext	ext	ext	ext	ext	ext	ext	ext	ext	ext	ext	ext	ext

Note: int – service provided by internal employees, ext – external service provider

Source: University and teaching hospitals

The analysis is based on financial statements for 2018 and contracts valid in that period. The lowest contractual price among the compared hospitals is considered the reference price for operational services. Cleaning and security services are an exception – we state the reasons in a dedicated passage. Energy prices negotiated by the hospitals were compared to commodity prices on PXE stock exchange<sup>38</sup>. If several contracts with different contractual conditions existed in the course of the monitored period, the final unit price was calculated as a weighted arithmetic mean of the period.

For more information about the operational expenses of hospitals and a calculation of savings, see the Annexe about operational expenditure of hospitals.

**Measure:**

- Optimise unit prices of procured operational services in teaching and university hospitals with savings amounting to 6.1 million euros per year.
- Unify the object and parameters of procurement contracts for operational services for all university and teaching hospitals in order to ensure mutual comparability, expenditure optimisation and efficient spending of public resources.
- Benchmark unit prices of procured operational services in healthcare sector also against selected companies in other public administration sectors every 6 months.
- Stop concluding operational contracts for periods shorter than 1 year.

<sup>36</sup> This problem was removed by the order of the Minister of Health of the SR No. 6/2018 which came into effect on January 1, 2019. The order defines a unified accounting plan and management processes for internal accounting of contributory organisations and joint-stock companies within the authority of the MoH SR (<https://www.health.gov.sk/Clanok?Prikaz-6-2018>)

<sup>37</sup> Provided by security service employees.

<sup>38</sup> Power Exchange Central Europe, a. s.

## 4.7 Reimbursements from health insurance companies

**Reimbursements to hospitals for comparable patient cases differ considerably between individual health insurance companies.** VŠZP pays the most, particularly in university and teaching hospitals, Union pays the least in the majority of hospitals. In specialised institutes (e.g. National Institute for Cardiovascular Diseases, East Slovak Institute for Cardiovascular Diseases) and in children's hospitals, the health insurance company Dôvera pays more (Table 23).

Such a comparison of hospitals was not straightforward in the past. The current obligation of hospitals to report procedures in DRG units allows to transparently compare how much health insurance companies pay to hospitals for the first time, taking into account the different complexity of patient cases, regardless of reimbursement mechanism – the total health insurance company's expenditure on a hospital simply needs to be adjusted by the complexity of cases of the patients who are insured in the health insurance company, i.e. the so-called patient case-mix<sup>39</sup>.

**If each hospital received payments based on the highest health insurance company payment for an identical case, their budgets would increase by 72 million euros. If hospitals received the lowest payment, they would earn 100 million euros less.**

**The difference can probably be explained by inefficient payment conditions in individual health insurance companies. If VŠZP paid the average of Dôvera and Union per case, it would save 35 million euros.** Paradoxically, the smallest health insurance company, Union, negotiates the best conditions.

**Table 23: Differences between health insurance companies in payments to hospitals\* by DRG**

	University and teaching hospital	General hospital	Specialised hospital	Children's teaching hospital	Total
Share of hospital stays	43%	45%	11%	1%	<b>100%</b>
Average expenses per 1 DRG in euros					
VŠZP	1,148	925	1,330	1,275	-
Dôvera	1,067	924	1,372	1,398	-
Union	1,060	875	1,329	1,280	-
Current payments of all health insurance companies, in million euros	519	383	271	18	1,191
<b>Savings</b> – if all HIC use minimum payments, in million euros	38	30	31	1	100
<b>Increase</b> – if all HIC use maximum payments, in million euros	20	19	31	2	72

\*data from 86 out of 107 hospitals

Source: MoH SR

**2020 budget increases resources in hospitals via value-increasing policy measures, particularly increased expenditure on nurses and long-term care.** Part of the expenditure increase will be allocated to nurses in inpatient care (measure No. 9 in the budget, see Chapter 11). Expenses on follow-up inpatient care in hospitals (as part of long-term care) will increase as well, i.e. care about the chronically ill, follow-up treatment and palliative care (measure No. 10 in the budget, see Chapter 14).

<sup>39</sup> The concept of case-mix is explained in Chapter 4.5.

## 5 Outpatient Care

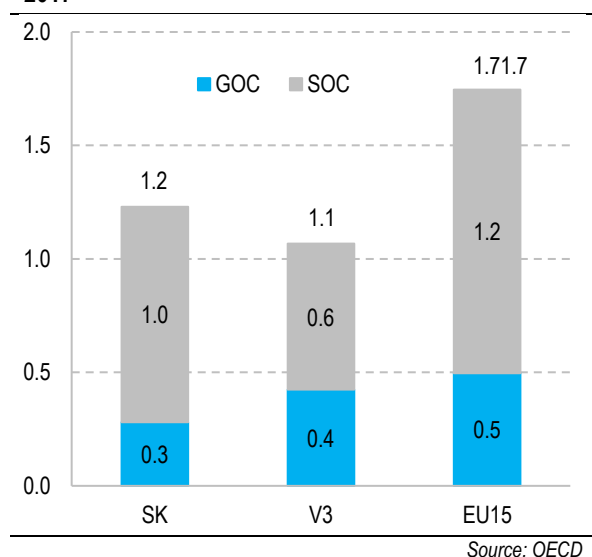
### 5.1 Outpatient care expenditure

**Slovakia dedicates 1.2 % of GDP to outpatient care, which is more than the neighbouring countries, but significantly less than EU15 countries (Graph 27). The proportion of the total package allocated to outpatient care is similar to rich countries (Graph 28).**

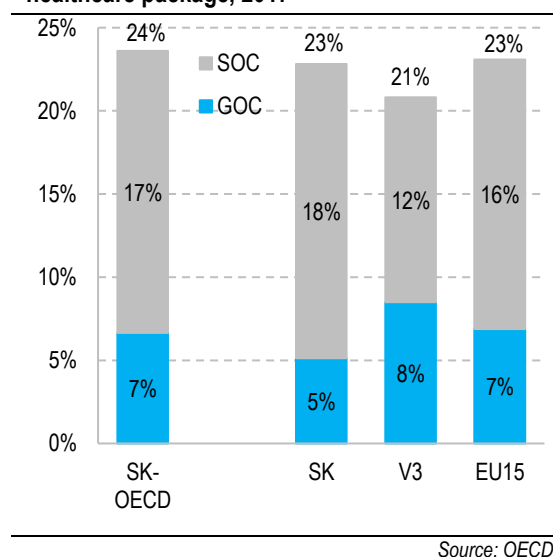
**Developed countries tend to create an extensive primary care network<sup>40</sup> (general outpatient care or GOC in Slovakia) which is intended to cover a broad scope of care. Slovakia dedicates 0.3% of GDP to primary care, which is less than its neighbouring countries. The neighbouring and rich countries allocate a larger proportion of funds from total healthcare package to primary care than Slovakia.**

**On the other hand, a higher percentage of GDP as well as a larger portion of healthcare package is allocated to specialised outpatient care (SOC) compared to V3 countries. Slovakia gives a higher priority to SOC than EU15 countries.**

**Graph 27: Outpatient care expenditure, % of GDP, 2017**



**Graph 28: Outpatient care expenditure, portion of healthcare package, 2017**



**In the long term, it is necessary to purposefully increase resources in outpatient care along with the increase in overall healthcare package (according to the growth of national wealth and population ageing) and also reallocate the resources from specialised to primary care.**

### 5.2 Effectiveness and quality of outpatient care

**Primary care in Slovakia is ineffective, as follows from the comprehensive reports of the World Bank in cooperation with the Ministry of Health (references WB (2018a) and WB (2018b)). Inadequate primary care wastes resources because even in case of diseases which can be managed via primary care according to experience abroad, there is a**

- high number of specialised care visits and

<sup>40</sup> <https://www.oecd.org/health/health-systems/primary-care.htm> In this report, primary care/GOC includes general practitioners for adults, children and adolescents.

- high number of hospital stays.

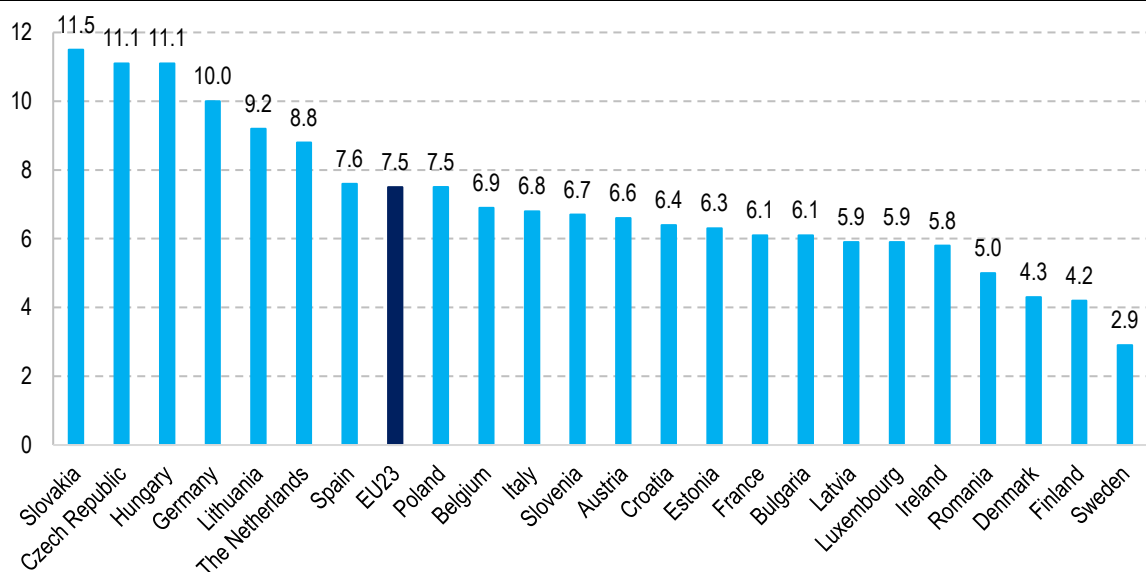
**High-quality primary care is linked to better health outcomes.** Mainly in case of diseases where prevention is very important (e.g. cardiovascular and oncological) and also thanks to a closer and long-term relationship of physician and patient (Schafer et al., 2017), fewer diseases manifest at a late stage. Mortality and morbidity of these chronic diseases will only rise due to population ageing. Good adjustment of primary care system is the key to ensure productive life for a large part of the population (WB, 2018a).

**Developed primary care is also connected to higher satisfaction of patients** as it saves their time which they would otherwise spend by visiting multiple specialists, it gives the possibility to consult more problems at once and solve them in a coordinated manner. **It also increases fairness** because more people have better local access to a general practitioner than to a specialist, mainly members of socio-economically disadvantaged groups and people at health risk.

### 5.2.1 Redundant visits

**Patients in Slovakia visit their doctor's offices too often, most often of the entire EU (Graph 29), but their treatment outcomes are worse.** A Slovak citizen visits their doctor 11.5 times a year on average, whereas in V3 countries the number of visits is lower by 1.6 (Table 24)<sup>41</sup>. Prevalence of diseases is comparable among V4 countries, the difference in the number of doctor visits thus stems mainly from an ineffective healthcare system. **In Western countries with the best health outcomes, people visit their doctor even less often.**

**Graph 29: Number of doctor visits in offices per citizen, 2016**



Source: OECD, Eurostat

<sup>41</sup> Patients visit doctor's offices also for purposes not related to healthcare provision, e.g. to get medical certificates. These "administrative" visits are not counted in the analysis.

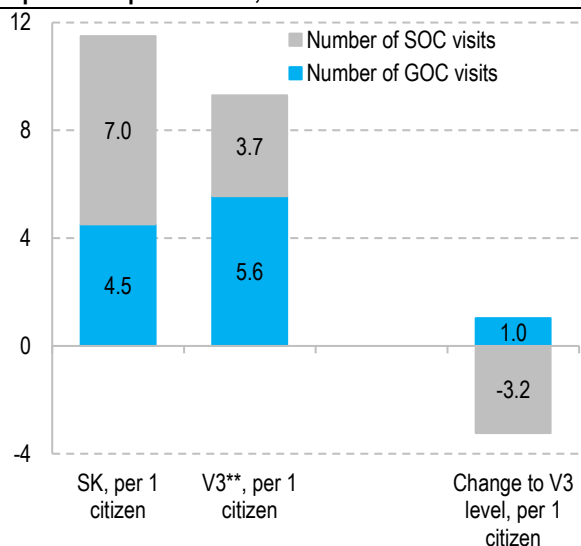
**Table 24: Number of doctor visits (2016) and prevalence of diseases (2017)**

	Number of visits per citizen	Preventable mortality, number of deaths per 100,000 citizens	Diabetes	Gynaecological	Neurological	Chronic respiratory	Ophthalmological	Dermatological	Mental
SK	11.5	168	8%	13%	48%	10%	15%	27%	12%
V3	9.9	145	12%	13%	48%	13%	16%	28%	12%
EU15	6.1	76	-	-	-	-	-	-	-

Source: GBDCN, Eurostat

**Slovaks visit their doctors too often, particularly specialists.** Outpatient visits include visits to general practitioners in primary care as well as visits to specialists. The number of GP visits is a little lower than in V3 countries, but the number of specialist visits in Slovakia is 1.5 times higher (Graph 30). This is caused by the fact that part of healthcare provided by specialists in Slovakia is performed by general practitioners with broader competences in other countries. This disproportion is also related to a lower ratio of general practitioners to specialists among medical staff (Chapter 11.2).

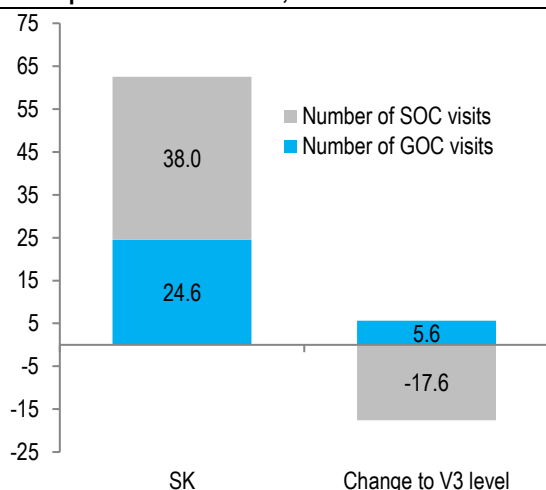
**Graph 30: Number of outpatient visits to GPs and specialists per 1 citizen, 2017\***



\*or sooner; \*\*without Czech Republic

Source: OECD, NHIC, Polish and Hungarian sources

**Graph 31: Total number of outpatient visits to GPs and specialists in millions, 2017\***



\*or sooner; \*\*without Czech Republic

Source: OECD, NHIC, Polish and Hungarian sources

**Specialists and general practitioners also differ in reimbursement mechanisms from health insurance companies which have a different impact on their motivation to provide healthcare.** Specialists are paid mainly per procedure (fee-for-service), which can lead to redundant procedures. General practitioners get a monthly capitation (payment per patient in a capitation basis of the physician's office). Reimbursement per procedure represents only a small portion of the funding, so the GP can be motivated to only treat less severe cases. Both types of mechanisms are common abroad where their shortcomings are compensated by innovative reimbursement mechanisms (OECD, 2015).

**A reduction of the number of specialist visits to V3 level could save 207 million euros (**

**Table 25).** The savings are based on a reduction of the number of visits by 18 million and expenditure on an average visit to a specialist with competences which are performed by general practitioners abroad, amounting to 11.7 euros (Table 26). The policy measure requires phased implementation and the total amount of savings is expected to be achieved in 10 years. The released financial resources will be redistributed among existing providers in a targeted manner.

Part of specialist visits would be transferred under GOC to achieve average number of GP visits in the V3 countries. However, it is not enough to reimburse these new visits in GOC. In order for the general practitioners to handle these new visits, it is necessary to increase staff, material and technical capacities in GOC. Therefore, this scenario generates savings in SOC and requires an increase of funding in GOC as well (Chapter 5.3). However, in order to get to the V3 level, it is necessary to reduce the overall number of doctor visits – some visits are currently completely unnecessary (more in Chapter 5.3).

**Table 25: Savings thanks to less specialist visits**

Excessive visits in SOC per 1 citizen	-3.2
Excessive visits in SOC in millions	-18
Average reimbursement per visit in selected SOC	11.7
<b>Savings – reduction in SOC to V3 level, in million euros</b>	<b>-207</b>

Source: OECD, NHIC, Statistics Poland, KSH HU

**Table 26: Expenses and number of visits in selected SOC, 2017**

SOC	Total expenses, in million euros	Total number of visits, in millions	Average expenses per visit, in euros
Cardiology	18	1.2	14.8
Diabetology and endocrinology	17	2.1	8.3
Gynaecology and obstetrics	46	3.2	14.2
Dermatology	19	2.0	9.5
Neurology	23	2.0	11.2
Pneumology and phtiseology	14	0.9	15.3
Ophthalmology	27	2.1	12.8
Surgery	37	3.4	10.9
Allergology and immunology	13	1.2	10.6
<b>Selected specialties</b>	<b>214</b>	<b>18.2</b>	<b>11.7</b>

Source: NHIC

**Measure:** Reduce the number of specialist visits, which will potentially save 207 million euros.

## 5.2.2 Avoidable hospital admissions

**Patients in Slovakia are excessively admitted to hospitals for diseases which can be prevented by quality outpatient care.** The concept of avoidable hospital admissions is monitored by the OECD as an indicator of outpatient care quality. Patients with asthma, diabetes, heart failure, hypertension and chronic obstructive pulmonary disease are admitted most often.

**Compared to V3 average, Slovakia has an above-average number of hospital admissions mainly for hypertension, heart failure and asthma (Table 27).** More than 7 million euros per year can be saved by reducing the number of avoidable hospital admissions to V3 level. This number of hospital admissions can be also decreased by implementation of standard diagnostic and treatment procedures (Chapter 12) and hospital network stratification (Chapter 4.3).

**Table 27: Savings achieved by decrease in preventable hospital admissions to V3 level, 2015**

group of avoidable hospital admissions	number of hospital admissions in V3, per 100,000 citizens	number of hospital admissions in the SR per 100,000 citizens	difference in the number of Slovak hospital admissions compared to V3, per 100,000 citizens	average reimbursement per admission in the SR, in euros	Savings, in million euros
asthma	59	93	34	735	1.4
heart failure	422	417	-5	1,299	-0.35
chronic obstructive pulmonary disease	155	145	-9	776	-0.4
diabetes	192	204	12	923	0.6
hypertension	160	350	190	602	6.2
<b>Total</b>	<b>987</b>	<b>1,209</b>	<b>222</b>	<b>867</b>	<b>7.4</b>

Source: OECD, eHealth

**Measure:** Reduce the number of avoidable hospital admissions by better outpatient care, which will bring in potential savings of 7.4 million euros.

### 5.3 Effective primary care

**Ineffective outpatient care is a result of drawbacks of the current primary care system in Slovakia.** According to the World Bank, primary care lags behind mainly in terms of scope of healthcare it can cover and competences of healthcare staff, which is linked to insufficient capacities and structure of staff as well as poor coordination across specialisations.

#### 5.3.1 Scope of healthcare and competences in primary care

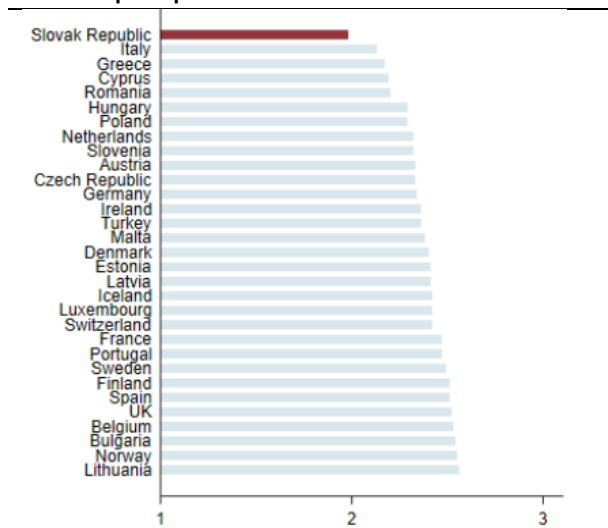
**The ability to cover “wide scope of practice”<sup>42</sup> in primary care in Slovakia is the worst of all countries compared in World Bank’s report (Graph 32) (WB, 2018a).**

**It manifests, for example, in the fact that general practitioners examine a patient without subsequent referral to a specialist in 72% cases, while the average in EU countries is 83% (Graph 33).** In countries with developed primary care system, this proportion reaches 90%. According to the World Bank’s study, Slovak experts, patients and general practitioners themselves agree that the scope of primary care is too narrow. Slovak doctors also think this situation has barely changed in the last 20 years.

<sup>42</sup> indicator defined in study by World Bank

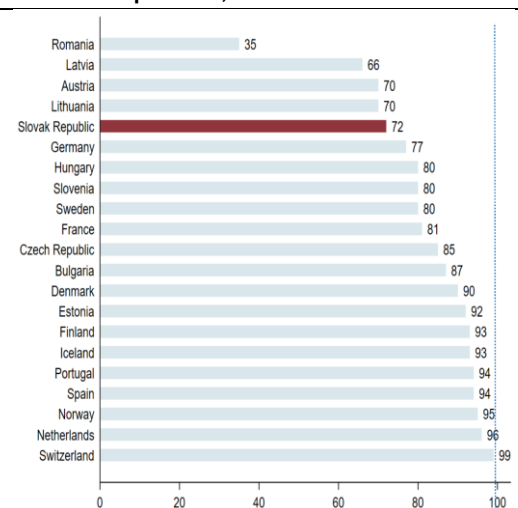


**Graph 32: The ability of primary care in Europe to cover wide scope of practice**



Source: Kringos et al. (2013)

**Graph 33: Proportion of examinations without referral to specialist, 2017\***



\*data from 2012; according to MoH, Slovak proportion has not changed as of 2017

Source: Kringos et al. (2013)

Primary care in Slovakia cannot cover a wide scope of care because of the narrow scope and poor enforcement of general practitioners' competences.

Slovak GPs use only 70% of competences of an average general practitioner in the EU and as little as 48% of competences of their colleagues in countries with the best primary care (Table 28). They lag behind mainly in terms of the ability to perform small surgical interventions and availability of medical equipment (EKG, otoscope) necessary for some examinations (Kringos, 2013). In case of many chronic conditions, general practitioners do not have the competence to indicate pharmaceuticals to patients, they can only draw up repeat prescriptions previously prescribed by a specialist. General practitioners cannot even monitor many chronic conditions (WB, 2018a).

**Table 28: Comparison of competences of general practitioners**

	Medical equipment	First contact	Management of selected diagnoses	Small surgical interventions	Preventive care	Health promotion	Total	SK/benchmark ratio
Number of points in categories – more points mean more competences a doctor can perform								
SK	4	5	6	0	4*	4	23	-
EU	8	6	7	3	6	3	33	70%
Countries with the best system	9	≥9	9	≥8	≥9	4	48	48%
Highest number of points	9	10	9	10	11	4	53	43%

Note: \*If we include competences of paediatricians and gynaecologists, the assessment will be 8/11

The authors of the WB (2018a) study admit that primary care can be assessed as more complex if gynaecology and paediatrics are included

Source: Kringos et al. (2013)

### Box 3: What is considered as primary care in Slovakia

For the sake of this report, the following specialties of physicians are included in primary care:

- General practitioner for adults
- General practitioner for children and adolescents
- First aid medical service – outpatient care for adults
- First aid medical service – outpatient care for children and adolescents

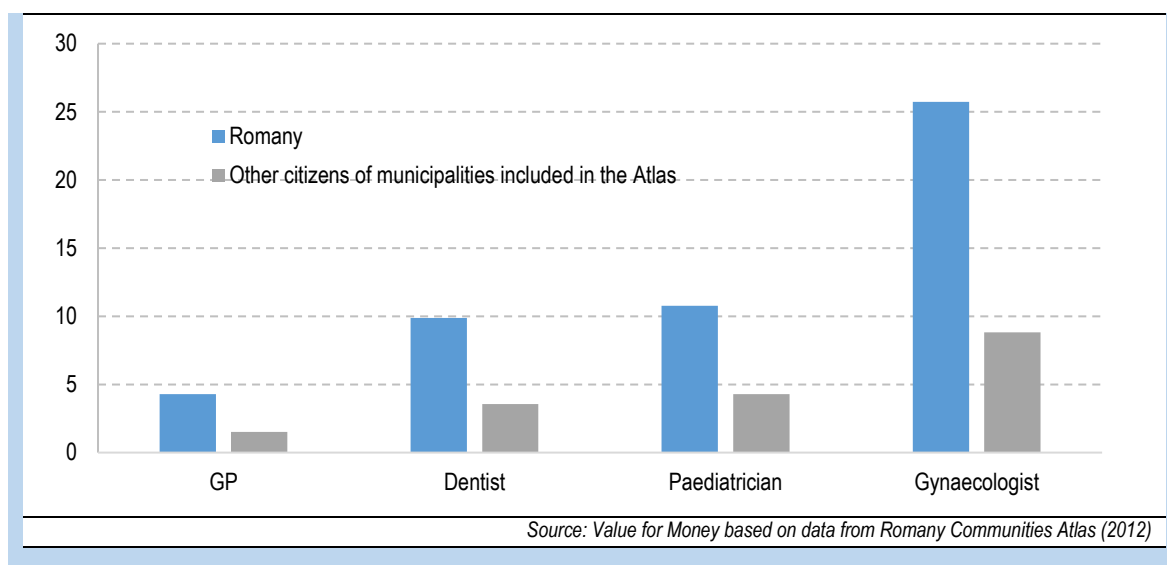
**In many countries, gynaecologists are considered part of primary care as well.** Gynaecologists are considered part of primary care in Slovakia in some regards; for example, they are paid by capitations, patients do not need a referral from their GP to visit them and they provide complete gynaecological care including preventive care.

**World Bank recommends transferring part of competences of gynaecologists to general practitioners to improve access to primary care.** In countries with strong primary care, female patients visit mainly their general practitioner; they visit a gynaecologist only in exceptional cases, for example in case of high-risk pregnancy (WB, 2018b).

**Since there are fewer gynaecologists than general practitioners in Slovakia, gynaecological care is not available to part of the population as much as general care, particularly to disadvantaged groups and rural population.** According to the Marginalised Groups Spending Review by the Ministry of Finance of the SR, the distance of healthcare facilities from place of residence is one of the reasons of low healthcare consumption in disadvantaged Romany groups. In municipalities with the presence of marginalised Romany communities, the portion of the Romany living 10 and more kilometres from the closest healthcare facility is almost three times as high as the portion in majority population (Graph 34). The biggest problem concerns the availability of gynaecologists' offices – as much as a quarter of women in marginalised Romany communities have to travel 10 or more kilometres.<sup>43</sup>

**Graph 34: Share of population living in a municipality 10 or more km from the closest doctor's office (%)**

<sup>43</sup> This comparison includes the entire Romany population included in Romany Communities Atlas, not only members of MRC.



The competences of general practitioners in Slovakia were broadened in 2014 and 2015<sup>44</sup>. However, the change was only partial and the majority of doctors did not start to implement the new competences in practice (WB, 2018a).

According to World Bank, the necessary increase in primary care effectiveness and the transfer of competences to general practitioners officially as well as in practice in Slovakia is impeded by:

- low expenditure on primary HC
- low number of general practitioners for adults, ageing staff
- low attractiveness of general medicine specialty among students
- remuneration mechanisms of physicians which do not provide desired motivation in GOC and SOC
- insufficient cooperation and coordination with specialists

Other obstacles to a more effective primary care are:

- insufficient readiness to perform the competences
- poor availability of primary HC, particularly in rural areas
- lack of standard diagnostic and treatment procedures
- lack of distance patient management

The topics and policy measures regarding the number, structure, remuneration and competences of staff are discussed in Chapter 11, standard procedures in Chapter 12.

**The implementation of strong primary care covering a wide scope of practice requires initial investments** (WB, 2018b), particularly in staff, training, remuneration, equipment and premises of offices. Investments in primary care are associated with a slower growth of healthcare expenditure in the long run due to cheaper and earlier treatment of many diseases which otherwise place a high burden on the system (cardiovascular diseases, diabetes).

**Measure:** Increase primary care resources to 0.4% of GDP – the average expenditure in V3 countries, which represents a potential 113 million euros in a 10-year horizon.

<sup>44</sup> Substantial changes from 2014 include broadening of the content and reimbursements of preventive activities (EKG, colon cancer prevention), definition of diagnostic exams delegated to GPs, permission to perform some pre-operation examinations and reimbursement of vaccination beyond capitation. Competences were broadened also in terms of management of patients with hypertension.

**One of the ways to free up the space for physicians to perform new competences is to remove redundant visits.**

**In countries with strong primary care, patients with some less severe diseases do not even enter the doctor's office.** One example are viral infections which can be treated mainly by sufficient rest – many patients in Slovakia spend time in the physician's room because of a viral infection and the doctor then prescribes them unnecessary pharmaceuticals, very often antibiotics (more in Chapter 4).

**Some countries have established telephone consultations as a form of first contact for such cases.** A nurse or a doctor consults the patient and assesses whether they need to come to the office. Besides filtering diseases right from the beginning, it is possible to monitor the course of many diseases over the telephone and thus prevent follow-up visits. This system has been implemented for example in doctor's offices in England<sup>45</sup>.

**Patients visit doctor's offices also for purposes not related to healthcare provision, e.g. to get medical certificates, which takes up even more of doctors' capacities.** Electronic medical certificates provided after consultation with a doctor over the telephone can further eliminate redundant „administrative“ visits.

**Educating patients about the symptoms and nature of diseases can help prevent redundant visits,** for example in case of viral infections.

**Measure:**

- Implement the option to consult the doctor over the telephone before a visit to the doctor's office, follow-up via telephone.
- Reduce the number of “administrative” visits.
- Educate patients about the need for prevention and home treatment.

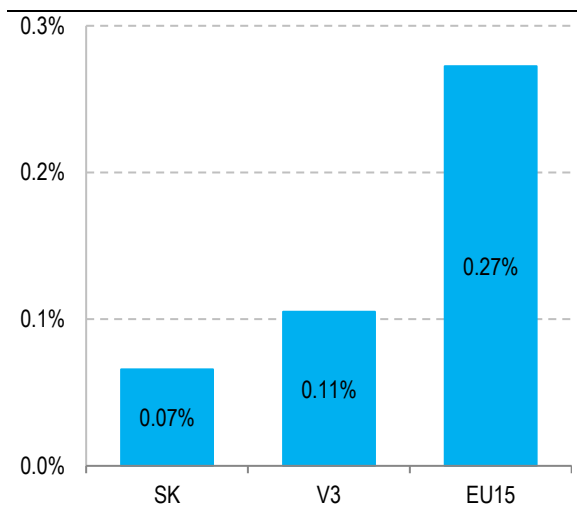
## 5.4 One-day healthcare

**Slovakia dedicates less money in terms of percentage of GDP and share of total healthcare budget to one-day healthcare compared to neighbouring countries and EU15 members.**

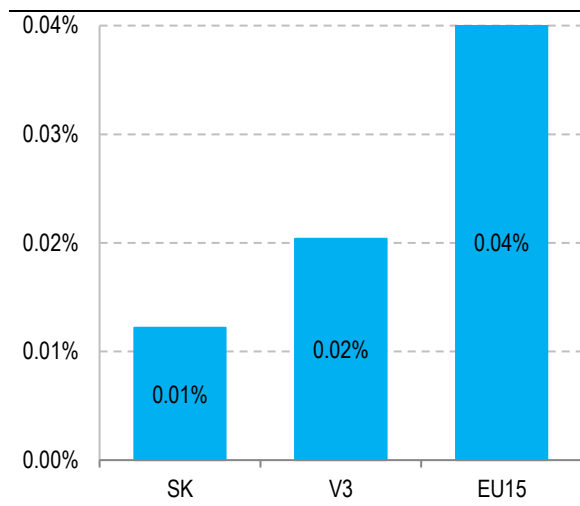
**Graph 35: One-day healthcare expenditure, % of GDP, 2017**

**Graph 36: One-day healthcare expenditure, proportion of healthcare package, 2017**

<sup>45</sup>[http://www.primarycarefoundation.co.uk/images/PrimaryCareFoundation/Downloading\\_Reports/PCF\\_Press\\_Releases/Making-Time-in\\_General\\_Practice\\_FULL\\_REPORT\\_28\\_10\\_15.pdf](http://www.primarycarefoundation.co.uk/images/PrimaryCareFoundation/Downloading_Reports/PCF_Press_Releases/Making-Time-in_General_Practice_FULL_REPORT_28_10_15.pdf)



Source: OECD

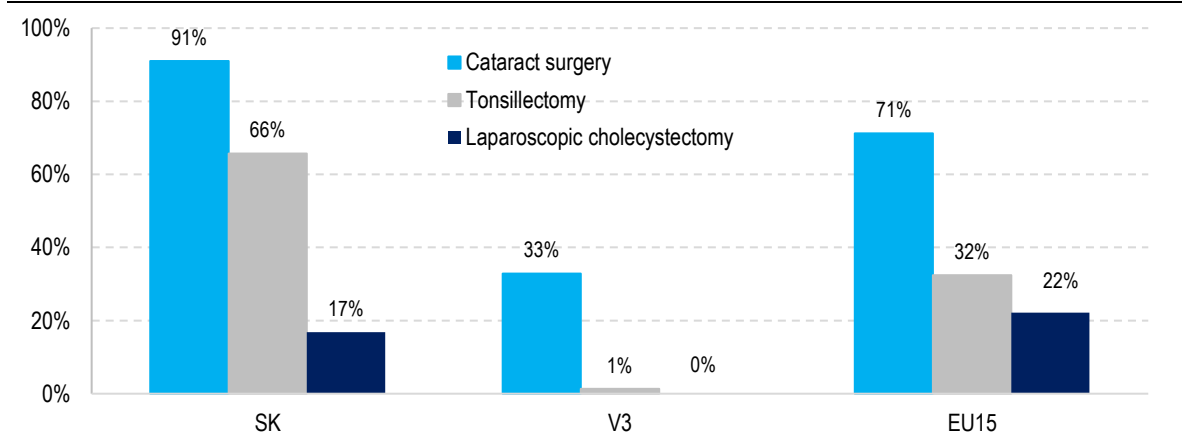


Source: OECD

**One-day care saves resources by providing simple surgical interventions which can be performed in one day and the patient does not need to be admitted to hospital.** One-day care in Slovakia is performed mainly in ophthalmology, gynaecology, surgery, orthopaedics and ENT. **Well-adjusted capacities and system of funding of one-day care are necessary in order for the hospital network reform to succeed** (Chapter 4.3).

**The share of one-day care in selected procedures is higher than abroad.** More than 90% of cataract surgeries and the majority of tonsillectomies (palatine tonsil removal) was performed in one-day care. Laparoscopic gallstone removal via one-day care is almost not performed at all in V3 countries, whereas it accounts for 17% of the interventions in Slovakia.

**Graph 37: Share of selected interventions performed in one-day care, 2017**



Source: HIC data, OECD

**The disproportion between expenses and the share of selected interventions in one-day care compared to other countries requires further study.** The explanation might be that OECD database includes data only for selected interventions, i.e. not for all those covered by one-day care in individual countries. The selected interventions might also be relatively cheap and the differences in expenses on one-day care among countries can be based on differences in other, more expensive interventions. Another reason might be the difference in morbidity or in reporting.

**Measure:** Gradually increase the share of one-day healthcare.

## Additional funding of inpatient and outpatient care

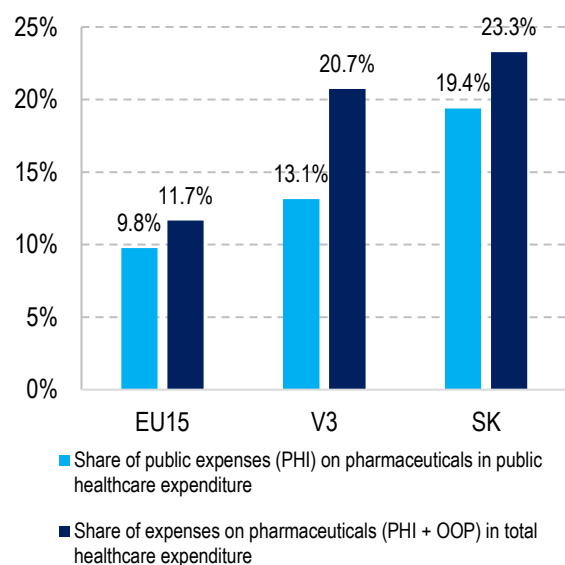
In 2020, resources for inpatient and outpatient care will be increased. University hospitals and teaching hospitals are unprofitable every year, which reflects in growing debt. The fact that health insurance companies' revenues have not been high enough to cover the hospitals' expenses on staff, pharmaceuticals, blood and medical material for a long time also contributes to the losses. Even if hospitals had zero expenses on utilities (e.g. electricity, heating, washing), the majority of them still could not cover the expenses on treatment out of public insurance. In outpatient care, resources for selected specialties, including general medicine, will be increased in order to strengthen general outpatient care.

**Measure:** Implement additional funding of inpatient and outpatient care.

## 6 Drug policy

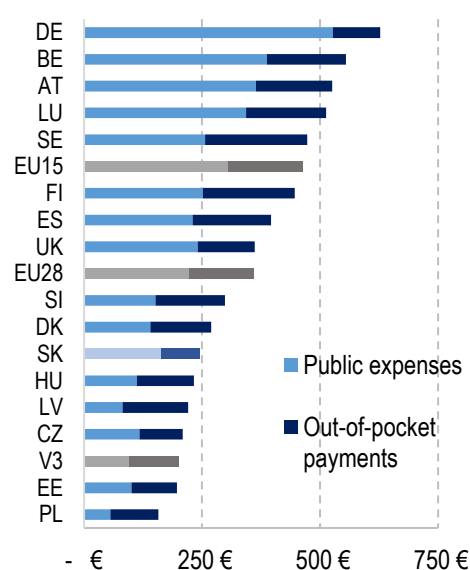
**Slovakia spends 1.2 billion euros of public funds per year on pharmaceuticals. Compared to V4 countries, pharmaceuticals form a larger portion of healthcare expenditure (graph 38)<sup>46</sup>. Evening up to the average in other V4 countries would free up 96 million euros per year in healthcare, which would save patients further 48 million euros<sup>47</sup>.**

**Graph 38: Expenses on pharmaceuticals dispensed in pharmacies (2017)<sup>48</sup>**



Source: OECD, NHIC

**Graph 39: Expenses on pharmaceuticals dispensed in pharmacies per person, going prices (in euros, 2017)<sup>48</sup>**



Source: OECD, NHIC

V4 countries allocate more healthcare expenses to pharmaceuticals than western European countries. The differences in packaging prices between countries are smaller than the variability of salaries and other expenses. Basically, the richer a country is, the more funds it can afford to spend on pharmaceuticals (graph 39) and, for example, reimburse less cost-effective pharmaceuticals from public funds.

**Total expenses on pharmaceuticals depend on packaging prices, total consumption and structure of consumption.**

- Official prices of pharmaceuticals in Slovakia are low due to external referencing – the prices of individual package sizes of pharmaceuticals are determined as the average of three lowest prices in the EU. However, the comparison does not necessarily have to include expensive pharmaceuticals administered in hospitals which are typically procured centrally abroad and their actual price is not referenced.
- Total consumption of pharmaceuticals in daily doses in Slovakia is similar to EU countries with the same reporting system and it does not justify higher expenses on pharmaceuticals.

<sup>46</sup> International price comparisons of pharmaceuticals only include pharmaceuticals dispensed in pharmacies. Pharmaceuticals administered in hospitals and doctors' offices as part of procedures are not reported reliably.

<sup>47</sup> If the proportion of PHI reimbursements in total expenditure on pharmaceuticals (PHI + OOP) remained unchanged.

<sup>48</sup> According to OECD methodology, this data should not include expenses on pharmaceuticals administered to patients directly in inpatient or outpatient care (pharmaceuticals type A/AS in Slovak terminology). However, Slovakia has also sent the data for this type of expenditure to OECD (centrally procured A/AS pharmaceuticals and some other A/AS pharmaceuticals). If the data originally provided to OECD was used, the public expenditure on pharmaceuticals would be highly overvalued. Due to this fact, we considered data from NHIC report L02\_R\_2017 as the Slovak public expenditure on pharmaceuticals.

- **One possible explanation of high expenses on pharmaceuticals in Slovakia compared to V3 countries is higher consumption and higher prices of expensive pharmaceuticals as well as the fact that a review of reimbursements for pharmaceuticals is long overdue.**

**Public expenses on expensive pharmaceuticals are related to the functioning of pharmaceuticals categorisation and cost-effectiveness assessment, which is a seriously flawed area of drug policy in Slovakia. The main measures of drug policy are improvements in cost-effectiveness with a savings potential of 55 million euros.** Many pharmaceuticals which are now fully reimbursed from public funds did not have to prove their cost-effectiveness to enter a category, even if they were deemed too expensive in many richer countries.

**Extension of central procurement of pharmaceuticals will save 26 million euros.** Abroad, expenses on expensive pharmaceuticals are reduced by stricter cost-effectiveness assessment as well as central procurement. The volumes of centrally procured pharmaceuticals in Slovakia grow but there are still many opportunities to improve the situation.

**Total annual potential of cost-saving policy measures for pharmaceuticals is 216 million euros, of which 114 million will be saved in 2020.** The measures define remedies for specific drawbacks of the Slovak drug policy (bottom-up approach).

## 6.1 Total consumption of pharmaceuticals

**Consumption of pharmaceuticals in Slovakia does not differ significantly in volume from EU countries with comparable reporting (graph 41). However, slight differences in consumption between countries exist in terms of the structure of therapeutic groups of pharmaceuticals (**

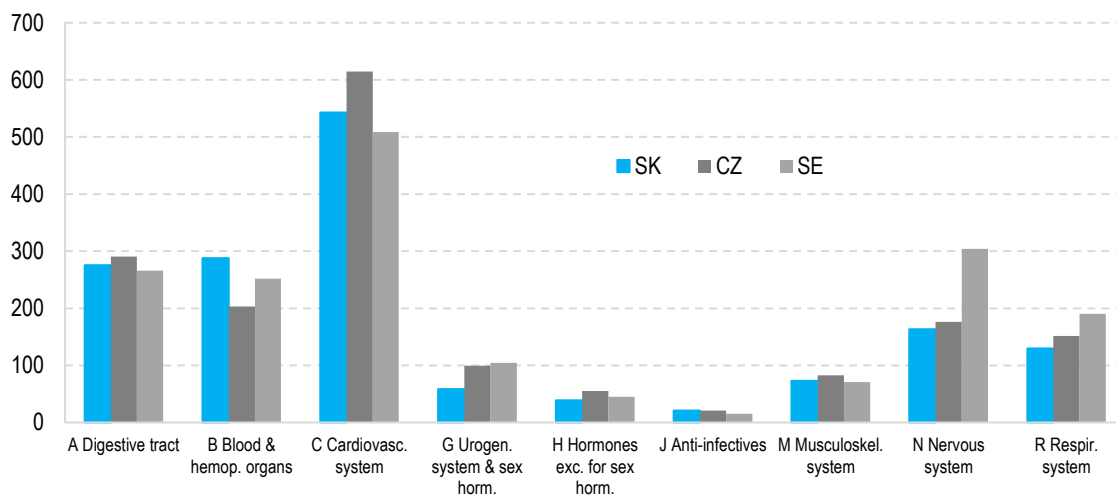
**graph 40; graph 42). Slovak doctors prescribe 50% more antibiotics than Swedish ones.** Swedish healthcare is considered one of the best practices in the EU. Even though Slovak citizens consume less pharmaceuticals, it is possible to observe structural differences between these countries. Lower consumption of some pharmaceuticals does not necessarily have to be positive news. Swedish patients consume considerably more pharmaceuticals for nervous system and urogenital tract. One of the explanations of higher consumption of pharmaceuticals for nervous system in Sweden is that mental health issues are not so stigmatised (Chapter 16)<sup>49</sup>. On the contrary, Slovak patients use more antibiotics (graph 42).

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<sup>49</sup> Even though group N also comprises other types of pharmaceuticals, according to NHIC, psycholeptics and psychoanaleptics account for the majority of consumption.

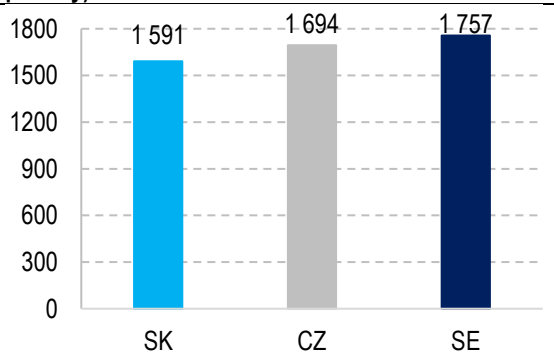


**Graph 40: Overview of Slovak consumption of pharmaceuticals compared to EU countries with similar reporting (per ATC<sup>50</sup> groups, in daily defined doses – DDD, 2017)<sup>51</sup>**



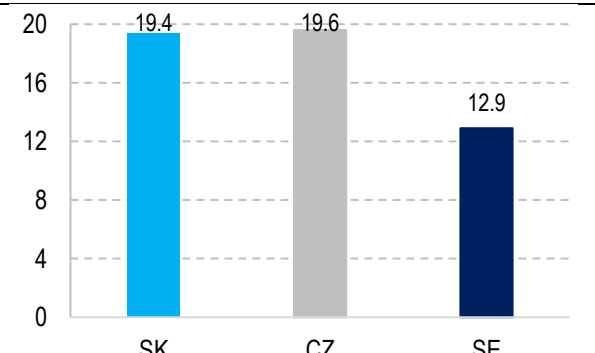
Source: OECD

**Graph 41: Total consumption of pharmaceuticals (groups from Graph 40, 2017, DDD per 1,000 citizens per day)**



Source: OECD

**Graph 42: Antibiotics consumption in 2017 (in DDD per 1,000 citizens/day; ATC group J01)**



Source: OECD

**Box 4: Methodology of price comparison of pharmaceuticals**

<sup>50</sup> Anatomical Therapeutic Chemical Classification System of Pharmaceuticals

<sup>51</sup> Within ATC group B, total consumption in DDDs is substantially overvalued because Slovakia, Czech Republic and Sweden report the consumption of folic acid in a different way than other OECD countries due to different definition of one DDD (0.4 mg vs 10 mg). Folic acid accounts for a large part of group B (over 50% in Slovakia), which is why 25-fold difference in reporting increases the number of daily doses considerably. However, this difference in methodology in SK, CZ and SE was not the reason not to include other countries in the comparison. The reasons are stated in Box 4.

Within the international comparison, the volumes of consumed pharmaceuticals are recalculated from packages to daily doses defined by the World Health Organisation. Data for Slovakia have been provided by NHIC since 2016. The manner of data reporting differs significantly across countries; for example, some states publish data without information from hospitals, eventually without over-the-counter pharmaceuticals. Another obstacle is that some countries report the volumes of pharmaceuticals delivered to pharmacies and not the consumption.

In the interim report of the healthcare spending review II, comparable EU countries were Czech Republic, Denmark, Estonia, Sweden and Italy. After more detailed analysis of data collection methodology regarding included pharmaceuticals, only Czech Republic and Sweden were deemed comparable in terms of reporting.

### 6.1.1 Overconsumption of antibiotics

**Slovak antibiotics consumption is comparable to Czech Republic but considerably higher than the consumption in Sweden which is one of the leaders in this area (graph 42)<sup>52,53,54</sup>.**

**Prescription of antibiotics when they are not necessary is connected to medical risks and needless financial expenses.** In 2018, patients were prescribed 5.1 million packages of antibiotics, while PHI expenses on antibiotics represented 20 million euros and out-of-pocket payments 12 million euros<sup>55</sup>.

**High consumption of antibiotics causes the bacteria to become resistant to treatment. Overconsumption of antibiotics puts the entire population at risk, not only the patient who overuses them.** There is a risk that diseases which have been considered easily treatable for dozens of years will become severe again.<sup>56</sup> Some predictions warn that antimicrobial resistance can be a more frequent cause of death than cancer in 2050.<sup>57</sup> Resistant bacteria spread in the free environment where other individuals can be infected. High resistance of bacteria can endanger also the safety of surgeries and other medical interventions.

**Antibiotics are most often prescribed by general practitioners for adults and children who prescribed 73% of packages in 2017. Individual doctors differ greatly in the quantities of prescribed antibiotics. Very important deviations should be reviewed by health insurance companies for medical and financial reasons.** Even if the average proportion of prescribed antibiotics out of all prescriptions by general practitioners for children and adolescents was 32%, there were some doctors among them who prescribed more than 60% of antibiotics out of all their prescriptions. Relevance of results was ensured by only including doctors who drew up prescriptions for at least 500 different patients in the analysed year.

**CRP examinations are not normally reimbursed to general practitioners for adults by all health insurance companies despite their possible benefits to reduce the volume of redundant antibiotics.** CRP examination consists of drawing a drop of blood from a finger and can immediately tell whether a disease is bacterial or viral and if an antibiotic should be prescribed. All health insurance companies reimburse CRP examination for children, amounting to approximately 4 euros. It is also necessary to strengthen the role of clinical pharmacologists in inpatient care.

<sup>52</sup> Comparison of year-on-year consumption is difficult because there have been changes in methodology of calculation of individual packaging consumption according to the latest WHO ATC definition of DDD. Slovakia does not retrospectively recalculate the consumption for previous years according to the latest methodology.

<sup>53</sup> Sweden has one of the lowest consumptions of antibiotics in the EU, which follows from the analysis: European Centre for Disease Prevention and Control. Antimicrobial consumption.(2018) In: ECDC. Annual epidemiological report for 2017. Stockholm: ECDC

<sup>54</sup> MÖLSTAD, Sigvard, et al. Lessons learnt during 20 years of the Swedish strategic programme against antibiotic resistance. *Bulletin of the World Health Organization*, 2017, 95.11: 764.

<sup>55</sup> Source: NHIC reports for 2018 L02\_R and L02\_LA\_R

<sup>56</sup> European Commission. (2017). A European One Health Action Plan Against Antimicrobial Resistance (AMR). *European Commission*.

<sup>57</sup> Review on Antimicrobial Resistance. (2016). *Tackling drug-resistant infections globally: final report and recommendations*. Review on Antimicrobial Resistance.

**Measure:** Overconsumption of antibiotics – reduce number of prescriptions to Swedish level

The goal of policy measures in the area of antibiotics prescription is to reduce their consumption significantly and approach the level of consumption in Sweden. Decrease in reported consumption is not decisive as it can be caused by the change of definition of daily doses by WHO which is done annually.

Health insurance companies should be obliged to ensure that patients can undergo CRP examination in unclear cases for free with the result in a few minutes. Free CRP examinations should become standard in emergency services for adults where doctors have to deal with excessive pressure from patients to prescribe antibiotics<sup>58</sup>.

## 6.2 Prices and reimbursement of pharmaceuticals

The reimbursement from PHI is affected by the price of specific packages of pharmaceuticals which is regulated according to prices in other EU countries. In Slovakia, the price of a medicament can be even lower if it is purchased via central procurement of pharmaceuticals. Public expenses on pharmaceuticals also depend on generic and biosimilar options in the system. These pharmaceuticals save money and are as reliable as original pharmaceuticals.

### 6.2.1 External referencing

**Thanks to international price comparison of pharmaceuticals, Slovakia has one of the lowest official prices in the EU<sup>59</sup>. Maximum price of a medicament is determined as the average of the three lowest prices in the EU.** The purpose of this so-called external referencing is to efficiently use the PHI resources – so as not to pay inadequately high prices for the same product as abroad. External referencing can legally take place 1 to 2 times per year.

**Only identical package sizes are compared to foreign countries. Manufacturers capitalize on this fact and only distribute unusual (overpriced) packages on the Slovak market. Change of legislation so that these pharmaceuticals are compared per unit price would save 5 million euros per year.**

Legislation change should not affect the availability of pharmaceuticals in Slovakia since it would only even the prices up to prices abroad (which are profitable to manufacturers), which is the very principle of external referencing which has been taking place since 2011. Pharmaceutical companies often use this comparison as the reason why some pharmaceuticals are not available in Slovakia. However, the issue of unavailable pharmaceuticals is considerable also in EU15 countries<sup>60</sup> which usually have higher prices of pharmaceuticals.

**Table 29: Example of a medicament sold in an unfavourable package size which is not sold abroad<sup>61</sup>**

Country	Name of medicament	Active substance and strength	Number of pieces in a package	List price per package (eur)
Slovakia	lomeron 400	lomeprol 163200 mg	10	1129.75
Czech Republic	lomeron 400	lomeprol 163200 mg	1	66.72
Hungary	lomeron 400	lomeprol 163200 mg	1	58.16
Greece	lomeron inj. sol. 40%	lomeprol 163200 mg	1	54.44

<sup>58</sup> According to a survey by Dôvera, patients often visit emergency in order to get antibiotics because their general practitioners did not want to prescribe them. <https://www.dovera.sk/aktuality/a3707/kde-platime-za-antibiotika-najviac-pozrite-sa-na-mape>

<sup>59</sup> Prices of pharmaceuticals, medical devices and dietetic food in Slovakia are set as the average of the three lowest prices out of officially set prices in EU members states, according to Law No. 363/2011 Coll.

<sup>60</sup> Source: <https://dennikn.sk/1538353/sefuje-kontrola-liekov-na-tuto-pracu-treba-odvahu-inspektorke-sa-vyhrazali-pytali-sa-jej-ci-si-je-ista-ze-ma-v-poriadku-auto/>

<sup>61</sup> Data collected from database on July 10, 2019. Referential exchange rate of the MoH from July 2019 was used.

**Since the price of medicament directly influences the reimbursement from PHI, unit price comparison in case of the medicament lomeron 400 would save 1 million euros annually.**<sup>62</sup> Three cheapest 1-piece packages in the EU are stated in the Table 29. The so-called list price is compared to foreign countries. It does not include tax nor surcharges of the distributor and pharmacy which makes the prices well comparable across countries. In case of the selected medicament, a 10-piece package is only distributed in Slovakia; a 1-piece package is sold in the other 8 EU countries where it is available. If price in Slovakia was compared to foreign countries per unit, lomeron 400 could cost less than 600 euros at maximum. According to NHIC data, 1,792 packages of this medicament were used in Slovakia in 2018.<sup>63</sup>

**Measure:** Use external referencing per unit of packaging (potential 4.8 million euros).

**The new system of external referencing also envisages comparisons of different package sizes if Slovak packaging is not available in at least three other EU countries.** This policy measure will prevent speculations with the strongest influence on PHI. Legislation change of Law No. 363/2011 Coll. prepared by the Ministry of Health is currently in the legislative process and should come into effect on January 1, 2020.

**Measure:** Perform price comparison of pharmaceuticals according to valid legislation as much as twice per year.

The current legislation allows to compare the prices of pharmaceuticals which were introduced into the system in the last 3 years with prices abroad twice a year. This option has not been used so far. For example, in case of medicament Amgevita, further comparison from October 1, 2019 would save 2.1 million euros in the payment group. However, second comparison is an option for other pharmaceuticals as well.

## 6.2.2 Central procurement of pharmaceuticals

**Central procurement (CP) of pharmaceuticals by health insurance companies or the Ministry of Health can achieve more favourable prices.** It is often possible to use several active substances to treat one diagnosis. If a health insurance company purchases a medicament centrally, patients are usually treated by this medicament. Manufacturers are willing to compete because even if they offer a lower price than the official one, it does not influence external referencing abroad (i.e. they will not have to lower the price abroad). Lower sale price of pharmaceuticals can be compensated to the manufacturer by significantly higher sales.

**The volume of centrally procured pharmaceuticals in Slovakia is low, it only represents 13% of the total value of all prescription pharmaceuticals, 12% in case of VŠZP. However, compared to previous years, there has been a significant improvement and in the period from 2016 to 2018, VŠZP increased the volume of CP pharmaceuticals by one quarter.** From the point of view of administering pharmaceuticals to patients, it is easiest to purchase pharmaceuticals which are administered in inpatient care or need to be administered by a healthcare professional (type A/AS). Centrally procured pharmaceuticals only represented 32% of these types of pharmaceuticals in 2018. In Denmark, it is almost 100%.

**The current central procurement system in Slovakia does not motivate manufacturers to lower their prices because sales volumes are not guaranteed.** Even if a manufacturer wins a VŠZP tender to provide pharmaceuticals and beats the competition with their price, it does not necessarily have to become the most used medicament in the respective category.<sup>64</sup> The legislation allows a competitive medicament to even up the winning

<sup>62</sup> In reimbursement group, after recalculating list prices to final prices, according to categorisation from October 1, 2019.

<sup>63</sup> The medicament is used as a contrast agent in diagnostics.

<sup>64</sup> Source: Internal document of the Institute of Health Policies: *Alternative solutions to guarantee contractual volumes in procurement of biosimilars and generic pharmaceuticals*

price.<sup>65</sup> In this case, the competition does not have to lower their official price of a medicament and still keeps the sales volume. The pharmaceuticals which did not win are still used in hospitals. Even if the current system seems favourable to public finance (savings due to lower price) and the patient (they do not get a different medicament, even though with identical characteristics), it is not suitable in the long term because of decreased motivation of manufacturers to come to Slovakia and offer a more competitive price.

**Measure:** Increase the volume of centrally procured pharmaceuticals to at least 25% of total expenditure on pharmaceuticals<sup>66</sup> (potential 26 million euros).

**Volume increase of central procurement from the current 13% (in almost all health insurance companies) to 25% would save 26 million euros from the PHI.** This 25% share represents a situation where all prescription pharmaceuticals administered in hospitals and doctors' offices (type of reimbursement "A" and "AS") are procured centrally. The example of Denmark shows that this goal is attainable.

**Measure:** Improve competitive environment in central procurement

The MoH SR has issued a methodical guideline (in effect from November 1, 2019) which guarantees minimal volumes of winning pharmaceuticals. This modification should increase the motivation of generics and biosimilars manufacturers to come to the Slovak market and thus indirectly increase the competition in central procurement of pharmaceuticals. Another measure of the MoH currently in preparation is the obligation of healthcare providers to use pharmaceuticals which have won a CP tender.

#### **Box 5: Procurement of hospital pharmaceuticals in Denmark<sup>67</sup>**

Denmark uses the public institution Amgros to procure almost all pharmaceuticals used in hospitals. This authority represents individual Danish regions and closely cooperates with manufacturers to provide trainings and necessary support with administration. Thanks to central procurement, Denmark achieves an average discount from the official medicament price amounting to 37% in case of hospital pharmaceuticals. Since Slovakia has lower official prices of pharmaceuticals than Denmark, slightly lower average savings can be expected.

In central procurement in Denmark, Amgros determines the requirements for distributors, such as delivery times and expiration date. Representatives of manufacturers then offer quotes online and the winner concludes a contract to distribute pharmaceuticals to hospitals, typically for 12 months. Hospitals send the requirements for necessary batches of a medicament directly to the winner, the process is automated. Amgros deals with eventual failures to deliver pharmaceuticals by ensuring a replacement alternative; in case of problematic pharmaceuticals, they store pharmaceuticals in their own premises.

### 6.2.3 Generics and biosimilars

**Generics and biosimilars help save considerable amounts of public funds. In 2019, introduction of these pharmaceuticals into the system saved at least 35 million euros per year, of which the majority will be reflected in this year's expenses.**

#### **Box 6: Generics and biosimilars**

**Generics are as effective and safe as original pharmaceuticals, but they are cheaper.** After a patent expires, other manufacturers can create an exact copy of the original medicament with the same characteristics, a so-called generic. Generics manufacturers can set the sale price much lower since they did not have such high expenses on R&D. However, they have to prove bioequivalence<sup>68</sup> with the original medicament. They can

<sup>67</sup> Information taken from the website of Amgros institution – [amgros.dk](http://amgros.dk)

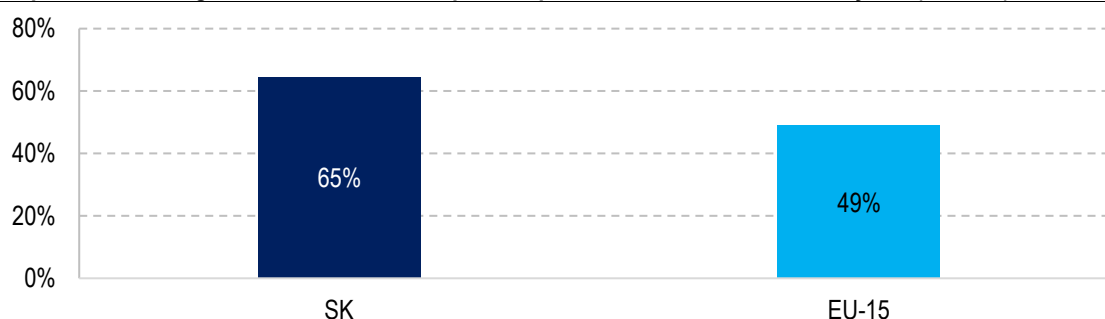
<sup>68</sup> Manner of how the medicament is released into the body

differ from the original medicament distributed in tablets by its colour or excipients, however, the active substance and dosage form must be the same.

**Biosimilars are a generic alternative to biological pharmaceuticals. Like generics, they save substantial amounts of PHI funds and improve treatment accessibility.** Biological pharmaceuticals are a modern type of treatment used mainly to treat severe diagnoses. Their molecules are much more complex than commonly used pharmaceuticals since a live organism is needed for their production. Basically, it is not possible to create completely identical molecules to the original biological medicament, which is also true about different lots of the original medicament. New lots of the original or biosimilars are so identical to the original medicament that they are considered equally effective and safe. This is guaranteed by ŠÚKL<sup>69</sup> or the European Medicines Agency (EMA).

**Slovakia has a higher share of generics in the consumption of pharmaceuticals reimbursed by PHI than western European countries (graph 43).**

**Graph 43: Share of generics in total consumption of pharmaceuticals reimbursed by PHI (% , 2017)**



*Note: The comparison is indicative, countries often use different methodologies to report their generics consumption.*

*Source: OECD*

**Slovak legislation requires every generic and biosimilar introduced into the system to be cheaper per daily defined dose than the cheapest comparable medicament<sup>70</sup> (table 30). This practice is common in other EU countries and Slovakia does not differ from practice abroad.<sup>71</sup>** Introduction of cheaper pharmaceuticals is connected to transaction expenses e.g. due to changes of prescription habits of doctors and patients. Compulsory lowering of prices guarantees savings in public funds and compensates indirect expenses.

**Table 30: Compulsory lowering of prices when a new medicament is introduced and categorised, effective from January 2019**

	1st non-original medicament in group	2nd in group	3rd and next in group
Generic medicament	-45%	-10%	-5%
Biosimilar medicament	-25%	-5%	-5%

*Source: current wording of the Law No. 363/2011 Coll.*

**Measure:** Promote the introduction of other generic and biosimilar pharmaceuticals.

Stable and predictable legislation in drug policy will promote the introduction of other generics and biosimilars in the coming years. The state can make the introduction of new pharmaceuticals into the Slovak market easier by more transparent requirements and active facilitation of the official process. Another option is to proactively contact manufacturers of cheaper pharmaceuticals which are not yet sold in Slovakia.

<sup>67</sup> Information taken from the website of AmgroS institution – [amgroS.dk](http://amgroS.dk)

<sup>68</sup> Manner of how the medicament is released into the body

<sup>69</sup> Štátny ústav pre kontrolu liečiv, State Institute for Drug Control

<sup>70</sup> Another medicament in the system with the same active substance and strength; the number of pieces per package can be different.

<sup>71</sup> INEKO, 2018, analysis of the status and possibilities of further use of biosimilar treatment in Slovakia



## 6.2.4 Quarterly review of reimbursements

**Review of reimbursements from PHI and thus of out-of-pocket payments for reimbursed pharmaceuticals takes place every three months.** This re-evaluation (so-called review of reimbursements) concerns categorised pharmaceuticals. The list of categorised pharmaceuticals (LCP)<sup>72</sup> regulates pharmaceuticals which are completely or partially reimbursed from PHI in Slovakia.

**Categorised pharmaceuticals are organised in groups and reimbursed from public funds only up to the price of the cheapest medicament in the group.** If a patient decides to buy a more expensive medicament, they have to pay the difference. This is how the state motivates patients to use cheaper pharmaceuticals of the same quality and saves public funds. Each group of pharmaceuticals should consist of medically interchangeable pharmaceuticals so that the patient can choose the medicament with the lowest out-of-pocket payment in the group.

**If the price of the cheapest medicament in the group is decreased, the next review will adjust the amount reimbursed from PHI and save money.** The price of the cheapest medicament is most significantly changed when the first generic medicament is introduced into the group (more about generic pharmaceuticals in Chapter 6.2.3). The law obliges manufacturers to set the price to 55% (75% in case of biosimilars) of the price of the original medicament (Table 30). External referencing also decreases the price of the cheapest pharmaceuticals in many groups. Price modification can be caused also by competition among different manufacturers of cheaper pharmaceuticals or with the manufacturer of the original medicament.

**In the review of reimbursements from April 1, 2019, savings were delayed by 3 months after the introduction of generics and biosimilars (box 7). PHI lost 1.8 million euros without added benefit in case of just one active substance, lenalidomide. More losses continue.**

### **Box 7: Change of practice after introduction of generics/biosimilars**

In practice, reimbursements in groups have been re-evaluated according to prices of cheaper pharmaceuticals, even if they were introduced into LCP only from the date of the review. If a generic/biosimilar was introduced into the list of categorised pharmaceuticals on April 1, 2019, PHI reimbursement for original pharmaceuticals would be lowered according to the price of newly introduced pharmaceuticals as standard practice. This would save PHI funds.

However, there has not been any modification of reimbursements in these cases in April. The modification was performed only when the next review was carried out (on July 1, 2019). It means that more expensive pharmaceuticals were fully reimbursed from public funds for 3 months longer. This change of practice continues, for example, when the medicament Benepali 50 mg was introduced, the reduction of reimbursement in the group was delayed from July to October, which cost PHI at least 0.5 million euros.

**Measure:** Correct delayed reductions of reimbursements after the introduction of generics and biosimilars (potential 3 million euros).

<sup>72</sup> The list is updated monthly and published at the MoH website, more substantial changes are done quarterly. Reimbursements from PHI are mostly modified by the introduction of generics and biosimilars, external referencing or re-evaluation of payment groups. The current LCP contains approximately 4,400 pharmaceuticals.

## 6.2.5 Change of structure of payment groups since July 2019

Since July 1, 2019, an extensive change of the structure of some groups of pharmaceuticals in LCP has been introduced. It has changed the reimbursements and out-of-pocket payments for a large part of pharmaceuticals. However, the change was performed in a questionable manner.

Since reimbursements are set according to the price of the cheapest medicament in the group<sup>73</sup>, the amounts of reimbursements and out-of-pocket payments are substantially influenced by how the pharmaceuticals are regrouped.

The decision process about payment groups was not transparent (lack of justification for the structure of groups of pharmaceuticals) and changes created new problems in the system (box 8, more detailed in Annexe 5). There have been more changes since October 1, 2019, and substantial modifications in payment groups are planned from January 1, 2020. However, according to the current proposal, the main drawbacks will not be removed.

Pharmaceuticals with different strengths have been compared at a larger scale since July, however, there is a difference if the patient uses 10 mg or 25 mg pills. Sometimes the patient cannot avoid a higher OOP.

Comparisons within new groups in order to determine the payment are based on daily defined doses (DDD) which are taken primarily from the WHO database. However, World Health Organisation does not recommend using DDD to determine the amount to be paid.<sup>74</sup>

### Box 8: Drawbacks of payment groups (change from July 1, 2019)

Types of issues with the change of payment groups:

- **Pharmaceuticals which are not interchangeable and have different strengths were included in one group in order to determine the reimbursement, out-of-pocket payment for a medicament with a more expensive strength increased and the patient has had no medically correct way to avoid this increase.** Even though the change has a positive financial impact on the PHI, it is the patient who pays for it.
- **Higher prices of pharmaceuticals with a cheaper and fully interchangeable alternative are also reimbursed from public resources. This situation can be much worse for the PHI than if the group was not created at all** (the problem is explained in Annexe 5 on the example of group U106 with annual negative impact on PHI amounting to 340 thousand euros with no added benefit for the patient).

The situation is best visible if there are non-interchangeable pharmaceuticals with different strengths in one payment group, but the payment is not determined according to the lowest price per DDD but according to the second or third lowest. If there are generics in the group, it gives more expensive manufacturers an unfair advantage against competition.

**Measure:** Change payment groups from January 1, 2020.

From the beginning of the next year, re-evaluation of payments for a large part of pharmaceuticals will take place as a result of the latest changes in payment groups. 7.9 million euros will be saved annually on public health

<sup>73</sup> Setting the reimbursements based on the cheapest medicament per default dose in a group is a correct practice, however, it is important to only have interchangeable pharmaceuticals in one group.

<sup>74</sup> Source: [https://www.whocc.no/use\\_of\\_atc\\_ddd/](https://www.whocc.no/use_of_atc_ddd/)



insurance from 2020, however, the change will not remove the main problems of the method of grouping pharmaceuticals. Complex correction is still in order.

**Measure:** Re-evaluate the structure of payment groups.

### 6.2.6 Review activity of health insurance companies

**We can see cases of physicians prescribing pharmaceuticals contrary to official recommendations of the manufacturer in reimbursement reports of health insurance companies.<sup>75</sup> Stronger medical record review activity (“review activity” for short) of health insurance companies would help avoid high-risk cases.** The problem concerns for example anxiety pharmaceuticals (Chapter 16); patients use these addictive pharmaceuticals for too long. More detailed review activity and implementation of eHealth functions can reduce multiple prescriptions of the same medicament by different physicians or severe interactions between pharmaceuticals.

**Measure:** Improve review activity of health insurance companies and implement more eHealth functions.

### 6.3 Cost-effectiveness of pharmaceuticals

**Reduction of total expenses on pharmaceuticals which do not fulfil cost-effectiveness criteria will save 55 million euros.** As a standard, pharmaceuticals have to prove their sufficient cost-effectiveness in order to be reimbursed from public health insurance (included in the list of categorised pharmaceuticals). However, many of the categorised pharmaceuticals have avoided this process.

In Slovakia, the cost-benefit analysis of pharmaceuticals has been done via QALY indicator since 2011 – it indicates how many years of life in perfect health the new medicament will bring to the patient. If a new medicament can help the patient live 10 years longer than the current treatment, but only in half the ideal health, the medicament gets 5 QALY units. The question how much the state is willing to pay at maximum for one year of healthy life is partially ideological. A limit of 24 – 35 multiple was used until the end of 2017. At the moment, the threshold is 28 – 41 multiple of average monthly salary from two years ago, depending on the fulfilment of additional criteria.

**Table 31: Thresholds to calculate cost-effectiveness of pharmaceuticals (2018)**

Country	QALY value (relative)	QALY value (absolute in euros)
Slovakia until 12/2017	24 – 35 multiple of average monthly salary	-
Slovakia since 01/2018	28 – 41 multiple of average monthly salary	25,536 – 37,392
Poland, Hungary	Triple of GDP per person <sup>76</sup>	32,841 euros (Poland), 36,890 (Hungary) <sup>77</sup>
Czech Republic	0.9 mil. – 1.2 mil. CZK / 1 QALY <sup>78</sup>	34,787 – 46,382 <sup>79</sup>

<sup>75</sup> Contrary to the Summary of Product Characteristics (SmPC)

<sup>76</sup> CAMERON, D., UBELS, J., NORSTRÖM, F. (2018) On what basis are medical cost-effectiveness thresholds set? Clashing opinions and an absence of data: a systematic review. *Global health action*, 11.1: 1447828.

<sup>77</sup> Tesar, T., Obsitnik, B., Kaló, Z., & Kritensen, F. B. (2019). How Changes in Reimbursement Practices Influence the Financial Sustainability of Medicine Policy: Lessons Learned from Slovakia. *Frontiers in Pharmacology*, 10, 664.

<sup>78</sup> Czech State Institute for Drug Control considers 1.2 million Czech crowns / 1 QALY as the acceptable cost-effectiveness threshold, in case of values between 0.9 million and 1.2 million, it evaluates possible risks of the analysis. Source: <http://www.sukl.cz/leciva/sp-cau-028>

<sup>79</sup> ECB exchange rate from September 24, 2019, 1 euro = 25.872 CZK

**Slovak public resources are also used to reimburse pharmaceuticals which are considered less cost-effective than in the neighbouring countries. For example, potentially cost-ineffective pharmaceuticals (PCIP) have been financed from PHI for a long time even though they did not have to prove their cost-effectiveness.** In Slovakia, cost-effectiveness requirements only apply to pharmaceuticals which have been introduced into the system after 2011. Moreover, if a new medicament is supposed to replace a currently used one which did not have to prove its effectiveness, it is enough if the new medicament is more effective (but it still does not have to fulfil basic cost-effectiveness conditions).

**The Ministry of Health has the option to initiate a pharmacoeconomic analysis by marketing authorisation holder even if the medicament is already reimbursed** (according to Law No. 363/2011, §93).

**A more suitable solution in terms of credibility of data and possibility of verification would be if the state had the option to conduct its own pharmacoeconomic assessment in case of suspected low effectiveness** and remove the medicament in question from the list of reimbursed pharmaceuticals based on this assessment (if the marketing authorisation holder did not lower the price to the required level). However, Slovakia currently does not have sufficient staff capacities to assess cost-effectiveness of medical technologies, which is suggested by a case study from New Zealand.

**Pharmaceuticals indicated for very rare diseases (diseases affecting less than 1 patient per 50,000 citizens) are an exception in cost-effectiveness analysis. However, there was a legislation change in 2018 which jeopardized financial stability of the system** (Chapter 6.3.1).

**Cost-effectiveness assessment is not applied in other areas of the healthcare sector.** If the same methodology was used for example in case of medical procedures, health insurance companies should be willing to pay approximately 30 thousand euros more for a surgery than for another intervention if the surgery gives the patient 1 more year of life in perfect health compared to the other intervention. In an ideal system, benefits of screenings or social service facilities should be compared as well in order to know where further investments will bring the greatest benefit.

**Measure:** Reinforce staff capacities for HTA assessments.

Value for money in drug policy will be increased if there is an objective cost-benefit analysis also for pharmaceuticals which were not assessed in the past. Establishment of a separate HTA agency for the assessment of pharmaceuticals and other medical interventions will ensure more independent decisions. Reinforcement of capacities will allow to prepare our own pharmacoeconomic analyses which will be more credible and better methodologically comparable.

#### **Box 9: Pharmacoeconomic analyses in New Zealand<sup>80</sup>**

New Zealand regularly ranks pharmaceuticals based on their cost-effectiveness and according to this ranking, it is determined which pharmaceuticals can be reimbursed from public resources. Even though New Zealand has a similar population to Slovakia, it finances a state HTA agency Pharmac to assess which pharmaceuticals are suitable to be reimbursed from public funds. The agency has over 100 employees and focuses on cost-benefit analyses of medical products. Unlike Slovakia, where only 3 employees perform HTA analyses, Pharmac prepares their own assessments in order to ensure sufficiently reliable quality of data and their mutual comparability. In order to achieve financial sustainability, New Zealand uses a fixed budget for pharmaceuticals and regularly re-evaluates which pharmaceuticals should be reimbursed. An assessment of a medicament can be reworked if the requirements on which the primary analysis was based change significantly. Pharmac publishes a detailed pharmacoeconomic guide with explanations how they assess cost-effectiveness. It is available online:

<sup>80</sup> Source: <https://www.pharmac.govt.nz/>

### 6.3.1 Cost-ineffective pharmaceuticals in the system

**Because of an unsuitable definition of pharmaceuticals indicated for rare diseases valid in 2018, pharmaceuticals with an annual impact of 74 million euros were introduced into the system of reimbursed pharmaceuticals even though they did not have to prove their cost-effectiveness.**

New amendment of the Law No. 363/2011 Coll. came into effect on January 1, 2018. It was intended to give more patients with very rare diseases access to treatment reimbursed by the insurance. Manufacturers of some pharmaceuticals for rare diseases (so-called ultra-orphans) thus do not have to prove standard cost-effectiveness in order to have their pharmaceuticals reimbursed from public health insurance (i.e. included in the LCP).

**Measure:** Establish rules of cost-effectiveness also for pharmaceuticals for rare diseases (potential 10 million euros).

**Several substantial changes of wording of the draft have taken place during the legislation process, which caused significantly more pharmaceuticals with no proof of cost-effectiveness to be classified as reimbursed pharmaceuticals than intended** (details in Annexe 6). The MoH corrected the definition of pharmaceuticals for rare diseases in January 2019. The problem remains for pharmaceuticals introduced into the system in 2018 without proof of their sufficient benefit which are still reimbursed from public resources.

**It should be compulsory for each new medicament applying to be categorised to prove its cost-effectiveness.**<sup>81</sup> Fair and transparent drug policy will increase cost-effectiveness thresholds also for pharmaceuticals for rare diseases. The established criteria will need to be met also by pharmaceuticals which have already been introduced into the system.

**A solution for pharmaceuticals which do not fulfil the thresholds could be Managed Entry Agreements (MEAs). Marketing authorisation holders can privately adjust their price to the required thresholds and thus avoid changes in pricing abroad.** MEAs are agreements between the payer (PHI, sometimes HIC) and marketing authorisation holder to determine more favourable pricing terms or to reduce uncertainty related to the introduction of a new medicament into the market. It is often done by determining maximum amount to be paid for a time period, which serves as a safety measure for the payer. In case the agreed threshold is overdrawn due to unexpectedly high consumption, the authorisation holder gives extra revenue back to the payer.

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<sup>81</sup> A medicament entering an already existing ATC group is not considered a new medicament in this case.

#### **Box 10: The most expensive fully reimbursed medicament in Slovakia**

The current system in Slovakia allows to fully reimburse for example the medicament Spinraza 12 mg indicated to treat spinal muscular atrophy which costs at least 245 thousand euros for one year of treatment<sup>82</sup> and has planned annual reimbursement from PHI for all patients amounting to more than 8 million euros. The latest study<sup>83</sup> by Canadian Agency for Drugs (CADTH) shows that according to the manufacturer's data, this medicament achieves expenses of at least 450 thousand euros per 1 QALY in Canada, which provides more than 10 times lower value for money than is the standard threshold in Slovakia<sup>84</sup>. In Britain, National Institute for Health and Care Excellence (NICE) has stated that Spinraza is too expensive to be reimbursed from public resources<sup>85</sup> and agreed on a non-public price with the manufacturer.<sup>86</sup> Spinraza is not reimbursed from public health insurance in the Czech Republic<sup>87</sup>.

**Measure:** Re-evaluate reimbursements of pharmaceuticals which do not fulfil cost-effectiveness requirements (potential 45 million euros).

**Removal of pharmaceuticals which currently do not fulfil the cost-effectiveness conditions will free up 45 million euros which will be used in other areas of healthcare.** It is recommended to continue reimbursing the treatment for patients who are already using it so as not to endanger their health<sup>88</sup>.

The MoH has the right to ask for a pharmacoeconomic analysis of pharmaceuticals which have avoided the system. The Ministry can also remove from categorisation the pharmaceuticals which do not satisfy the current conditions (for example according to §17 5a). It will be difficult for part of the pharmaceuticals in question to prove their sufficient value for money according to Slovak requirements. This process will remove roughly 30 – 50 pharmaceuticals which were introduced thanks to the contentious wording of 363/2011 Coll. in 2018 (savings of 40 million euros).

Other savings are expected in case of other pharmaceuticals which did not sufficiently prove their effectiveness in the past (savings of 5 million euros for PCIP).

#### **6.3.2 Pharmaceuticals reimbursed in exceptional cases**

**In exceptional cases, health insurance companies can reimburse pharmaceuticals which are not categorised. 41 million euros from PHI are spent per year to reimburse these pharmaceuticals<sup>89</sup>. Exceptions are approved by health insurance companies and there are currently no unified binding rules.**

**Although the amendment of Law No. 363/2011 has increased the expenditure on categorised pharmaceuticals to 75 million euros per year, total expenditure on pharmaceuticals reimbursed in exceptional cases has not decreased in spite of the original intention of the reform (graph 45). Change of**

<sup>82</sup> Patient needs 4 packages of the medicament in the first 2 months of treatment, then 3 packages per year. Source: [https://www.ema.europa.eu/en/documents/product-information/spinraza-epar-product-information\\_sk.pdf](https://www.ema.europa.eu/en/documents/product-information/spinraza-epar-product-information_sk.pdf) PHI reimbursement for one package is currently 82 thousand euros.

<sup>83</sup> <https://www.cadth.ca/sites/default/files/cdr/pharmacoeconomic/sr0576-spinraza-resubmission-pharmacoeconomic-report.pdf>

<sup>84</sup> Pharmacoeconomic analysis from Canada is only used to illustrate the problem since cost-effectiveness can differ in different countries. However, the price in Canada is comparable to Slovakia. In case of type 2 and 3 of the disease, the medicament reaches over 1.4 million euros / QALY. What is more, the determined values were deemed too optimistic in all 3 types of the diagnosis by the Canadian agency and it was recommended to use values of at least 5 million euros / 1 QALY.

<sup>85</sup> Source: <https://www.nice.org.uk/guidance/ta588/documents/appraisal-consultation-document>

<sup>86</sup> Source: <https://www.biopharmadive.com/news/cost-effectiveness-agency-clears-biogens-spinraza-for-uk-patients/554863/>

<sup>87</sup> Source: <http://www.sukl.cz/modules/medication/detail.php?code=0222208&tab=info>

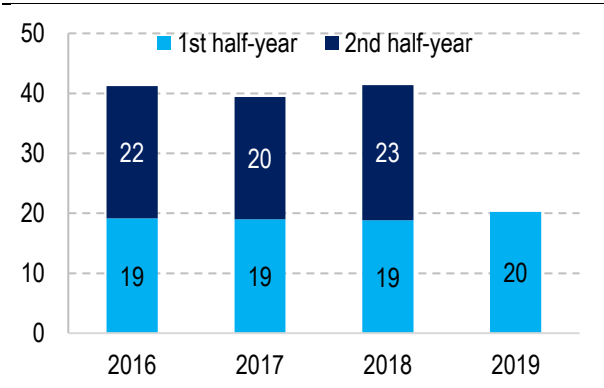
<sup>88</sup> For example in the form of exceptions via health insurance companies

<sup>89</sup> Data from Implementation Unit, original data from HIC and MoH SR

legislation in 2018 which gave an advantage to pharmaceuticals for rare diseases was intended to categorise a large part of pharmaceuticals reimbursed in exceptional cases and make them subject to the rules. Since the amendment of the law, 76 pharmaceuticals with “orphan” status have been introduced into the categorisation and 88 pharmaceuticals via standard pharmacoeconomic analysis. 16 million euros from these pharmaceuticals were reimbursed as an exception before the amendment. However, expenses on pharmaceuticals reimbursed in exceptional cases did not decrease by this amount because budgets for exceptions are often fixed as a stable annual sum to be used.

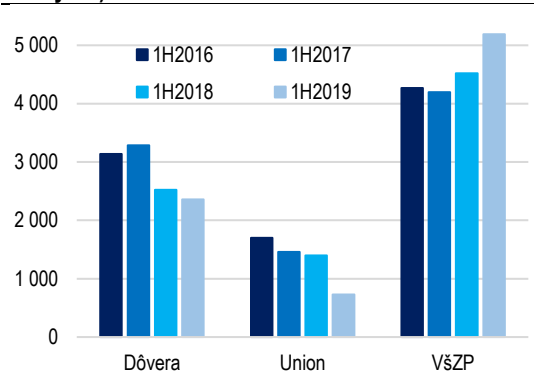
**VšZP pays much more per insured person for pharmaceuticals reimbursed in exceptional cases than the other HIC (graph 45) and its expenses on these pharmaceuticals increase year-on-year whereas they decrease in private HIC.**

**Graph 44: Annual reimbursements for pharmaceuticals reimbursed in exceptional cases from PHI (in million euros)**



Source: HIC, MoH SR, processed by Implementation Unit

**Graph 45: Reimbursements by HIC (in euros) for pharmaceuticals reimbursed in exceptional cases per 1,000 insured persons (for first half of the year)**



Source: HIC, MoH SR, processed by Implementation Unit

**Measure:** Pharmaceuticals reimbursed in exceptional cases – take into account systemic changes due to Law No. 363/2011 Coll. (potential 16 million euros)

**6.4 Redundant out-of-pocket payments**

**Slovak patients paid 148 million euros in OOP in 2018<sup>90</sup>, but they could save 66 million euros if they used cheaper pharmaceuticals of the same quality. Unjustified doubts about the quality of cheaper pharmaceuticals can discourage Slovaks to use them.** Patients could save the most money in case of cardiovascular pharmaceuticals – 27 million euros (table 32). Older patients pay more out-of-pocket payments which could have been avoided (graph 47). Health insurance companies gave the patients back 18 million euros thanks to protective thresholds.<sup>91</sup>

<sup>90</sup> All data about out-of-pocket payments come from health insurance companies, data are from 2018. Only pharmaceuticals fully or partially covered by health insurance company are included. Patients paid further 81 million euros for prescription pharmaceuticals not reimbursed from PHI (source: NHIC)

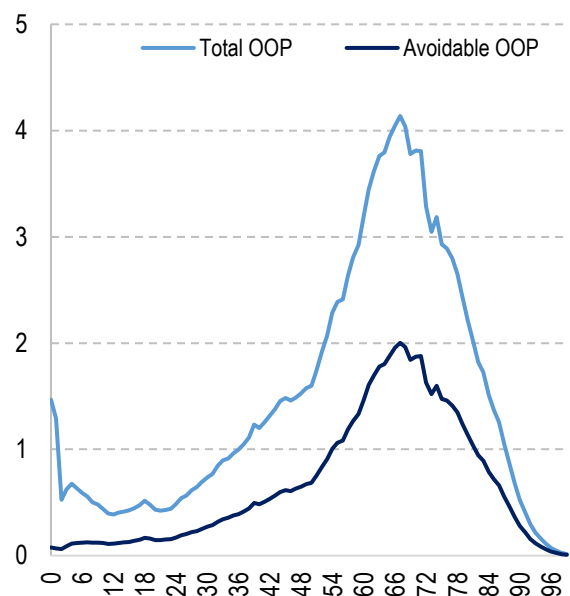
<sup>91</sup> Source: Monthly PHI monitoring.

**Table 32: Avoidable out-of-pocket payments by types of groups (in million euros, 2018)**

ATC categories of pharmaceuticals	Redundant out-of-pocket payments	Total out-of-pocket payments	Proportion
C (Cardiovascular system)	26.9	49.2	55%
N (Nervous system)	9.1	16.5	55%
A (Digestive tract)	7.6	20.0	38%
J01 (Antibiotics)	5.5	11.8	47%
B (Blood and hemopoietic organs)	5.1	10.5	49%
R (Respiratory system)	4.5	12.1	37%
O (Other groups)	4.5	19.4	23%
M (Musculoskeletal system)	2.6	8.8	30%
<b>Total</b>	<b>65.8</b>	<b>148.4</b>	<b>44%</b>

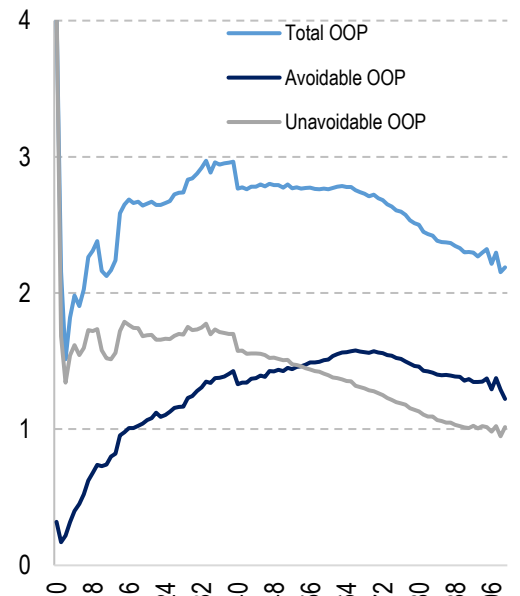
Source: health insurance companies' data

**Graph 46: Distribution of out-of-pocket payments according to age (in million euros; 2018)<sup>92</sup>**



Source: health insurance companies' data

**Graph 47: Average out-of-pocket payments according to age (in euros; 2018)<sup>92</sup>**



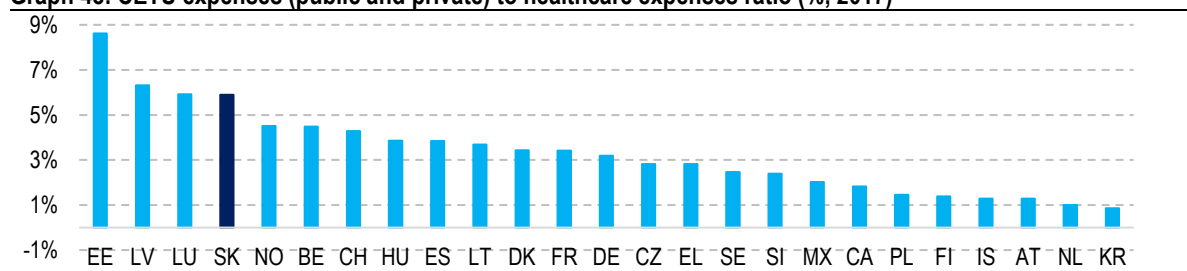
Source: health insurance companies' data

**Measure:** Redundant out-of-pocket payments – awareness campaign

## 7 Common examination and treatment units

Every year, 560 million euros from public resources are spent on common examination and treatment units (CETU).<sup>93</sup> Within the health sector, Slovakia dedicates a higher portion of funds to CETU than other V4 countries (graph 48). CETU represent those components of healthcare which have a supporting function in outpatient and inpatient care. They are used to diagnose and treat the patient and comprise for example laboratories (blood samples), various imaging devices (X-ray, CT, MRI) or rehabilitation.

**Graph 48: CETU expenses (public and private) to healthcare expenses ratio (% , 2017)**



OECD data according to SHA 2011 methodology contain CETU expenses mainly without hospitals, i.e. they do not represent the total volume. Laboratory and imaging services are also included. Slovakia does not report expenses on imaging services separately to OECD, however, it seems from the source data that they are included in the values for laboratory services. Comparison to other countries is indicative, it is not possible to rule out considerable differences in methodology.

Source:  
OECD

### 7.1 Laboratory examinations

**The majority of public expenses on CETU accounts for laboratory examinations.** Ineffectiveness of laboratory examinations was analysed in the first Spending review which has identified potential savings of 27 – 65 million euros. Of this amount, 3 million euros were established as the minimum fiscal savings achievable by implementation of prescription thresholds in doctors' offices. Duplicate or defensive examinations were identified as the primary source of ineffectiveness and the measure should have been implemented via rationalisation of the volume of requested care.

This measure was implemented only partially and savings were achieved by re-evaluation of contractual volumes with service providers and better review activity of HIC. However, the overall volume of reimbursed care has increased since 2017. While the increase represented only 0.8% between 2016 – 2017, it reached 3.9% between 2017 and 2018 and additional 4% is expected in 2019. Overall volume of reimbursed care is around 237.4 million euros without VAT (2018). Profit margins have diminished on average compared to 2015, but at the level of gross margin and after clearing the data from financial transactions or write-offs, it remains an above-average part of the sector with gross margins amounting to 35 – 75%.

<sup>93</sup> 561 million euros were allocated in 2017, of which approximately 70 million euros represent supplementary items which are part of reimbursements for procedures and are stated within outpatient care in the budget. The distribution of payments for CETU among health insurance companies corresponds to the distribution of total expenses within provided healthcare.



**Table 33: Overview of TOP 10 laboratory service providers in 2018**

Name	Reimbursements from PHI 2018	Gross margin finstat (%)	Profit margin
Alpha medical, s.r.o.	€57,428,473	59.81	-11.2%
Medirex, a.s.	€54,680,802	37.21	0.7%
HPL spol. s.r.o.	Closed down in 2017	Closed down in 2017	Closed down in 2017
synlab slovakia s.r.o.	€12,003,761	44.63	-1.5%
KLINICKÁ BIOCHÉMIA s.r.o.	€15,341,120	54.71	20.3%
Alpha medical patológia, s.r.o.	€615,381	66.85	24.6%
Medicyt, s.r.o.	€5,573,323	60.13	10.5%
Martinské bioptické centrum, s.r.o.	€5,981,704	74.68	4.3%
CYTOPHATOS, spol. s.r.o.	€4,950,103	63.8	13.1%
Analyticko-diagnostické laboratórium a ambulancie s.r.o.	€3,623,398	47.16	7.5%

Source: Public health insurance, finstat

A system of electronic orders and checks of laboratory examinations, so-called e-lab, will be implemented in live operation within e-health at the end of 2020. This measure along with prescription thresholds has the potential to reduce duplicate examinations and achieve the original extent of savings.

While duplicate examinations will be gradually eliminated in the course of the year thanks to digitisation, the problem of pricing of individual procedures remains. A large spectrum of laboratory examinations exists which can be carried out by different methods. One example is glycosylated haemoglobin. As much as 85% of all procedures are carried out via the most expensive method (44462). If the proportion of the most expensive method was not 85 but 10% of all examinations and diabetes monitoring was carried out via a cheaper method (4587a, which is a standard method equal in terms of precision, correctness and reproducibility, i.e. medical quality), PHI savings could achieve approximately 2 million euros per year. If all identified examinations were carried out by the cheapest method, the effectiveness could be improved by 15.2 million euros per year.

Each method has its limits in terms of time, equipment or human resources. Based on expert evaluation, it is not possible to transfer all procedures from a more expensive to a cheaper one, but pricing of more expensive procedures has not been reflected in their costs for a long time, neither in comparison with the Czech Republic nor by their added value. In comparison with the Czech Republic and the added value of individual procedures, estimated savings amount to 9.7 million euros per year.

**Measure:** Optimise laboratory examinations (potential 9.7 million euros).

## 7.2 CT and MRI examinations

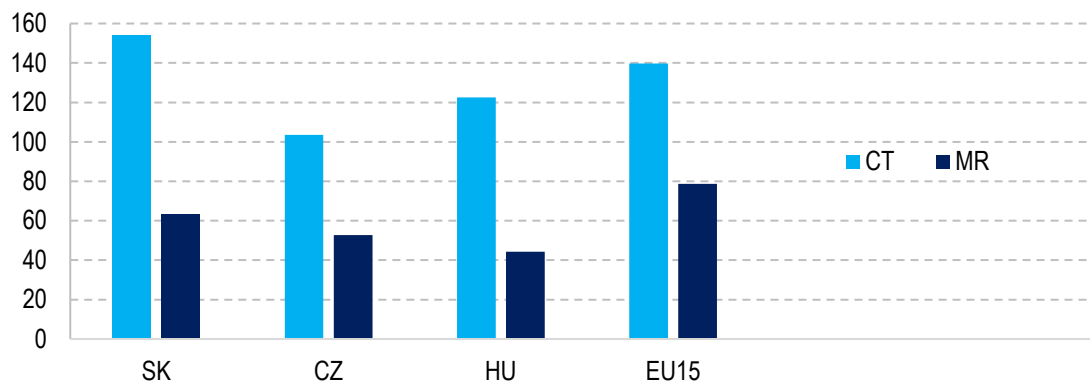
**Slovak patients undergo a third more CT and MRI examinations than patients in Czech Republic and Hungary (graph 49)<sup>94</sup>. Slovakia has surpassed also the average number of CT examinations in western European countries.** Unlike laboratory examinations, the volumes of procedures in magnetic resonance imaging and computer tomography are comparable internationally. Approximately 50 million euros from PHI are spent on CT and MRI examinations each year.<sup>95</sup>

<sup>94</sup> Poland uses a different methodology which substantially undervalues the number of examinations, which is why it was not included in the comparison. The number of examinations in Slovakia according to health insurance companies' data is slightly different than according to NHIC data supplied to OECD, probably due to different methodology (+7% for MRI / +16% for CT). Since this difference is positive, it does not affect the statement that Slovakia uses excessively high volumes of CT/MRI examinations.

<sup>95</sup> Source: health insurance companies' data for 2017, filtered by procedure codes 5600 – 5613 (MRI) and 5200 – 5212A (CT).



**Graph 49: Number of imaging examinations (per 1,000 citizens, 2017)**

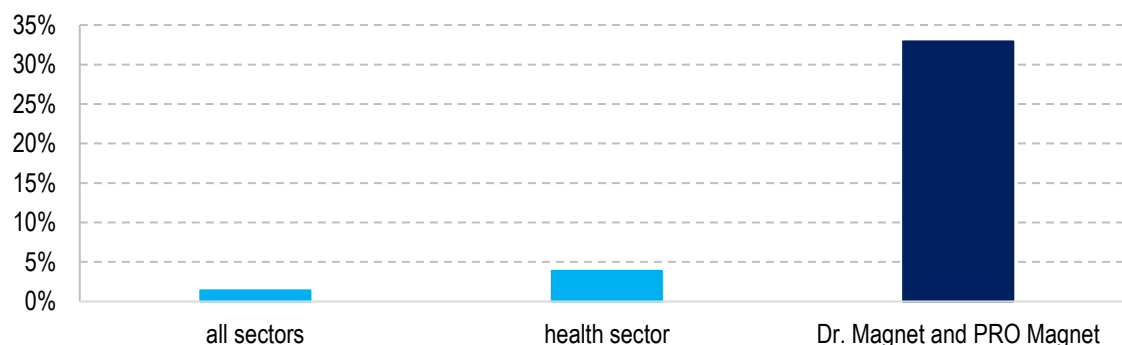


Source: OECD

**Excessive referrals to examinations, e.g. for patients who have undergone them recently (and their repetition has no added benefit), can be one of the reasons of higher volumes of MRI and CT examinations in Slovakia.** These referrals are a burden for the patient and for public finance as well. It is the role of review activity of health insurance companies to verify whether the examinations are justified. In 2017, 770 patients were examined by magnetic resonance imaging at least 5 times and 230 patients were examined by CT scan at least 10 times.<sup>96</sup>

**The majority of MRI examinations is carried out in the private sector which achieves extremely high margins in this segment. The fact is, however, that private facilities are often situated directly in hospitals.** The strongest position in the MRI procedure market belongs to Pro Diagnostic Group company (main affiliates Dr. Magnet and Pro Magnet). These two companies had revenues of 13.8 million euros and net profit of 4.5 million euros. Profit margin of 32% is very much above standard in the healthcare sector for a company this big (graph 50).

**Graph 50: Comparison of standard profitability of revenues with private MRI providers (profit/revenues, %, companies with revenues from 2 to 30 million euros in 2018)**



Source: finstat

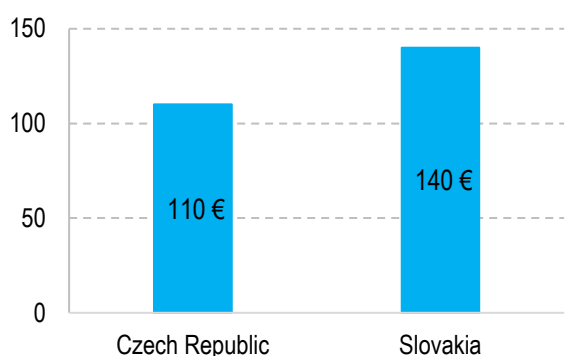
**In case of some MRI and CT examinations, Slovak reimbursements from PHI are substantially higher than in other V4 countries (Transparency International, 2015<sup>97</sup>). Although reimbursements have decreased**

<sup>96</sup> For the purpose of this analysis, we consider the number of examinations to be equal to the number of days when the patient underwent MRI/CT procedures. If several types of MRI/CT procedures were reported for one patient in one day, they are only counted once in the analysis.

<sup>97</sup> Source: <https://transparency.sk/sk/cetecko-je-u-nas-isty-a-velmi-vyhodny-biznis/>

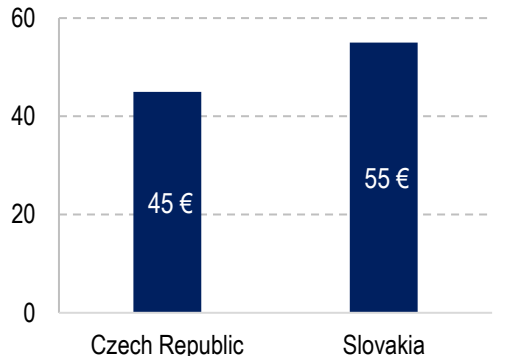
since 2015, current comparison with Czech Republic points out that there is still room for lowering the prices (graph 51, graph 52). Optimal prices should take into consideration also investment costs.<sup>98</sup>

**Graph 51: Comparison of head MRI prices<sup>99</sup>**



Source: health insurance companies' data 2017; Czech code list of procedures 01218, regulation No. 201/2018 Coll.

**Graph 52: Comparison of head CT prices<sup>99</sup>**



Source: health insurance companies' data 2017, Czech code list of procedures 01218, regulation No. 201/2018 Coll.

**Measures:**

- Re-evaluate reimbursements for MRI and CT procedures in order to optimise unit expenses and the volume of care (potential 8.9 million euros).
- Prevent excessive MRI and CT examinations by implementation of standards and review activity (potential 24.6 million euros).

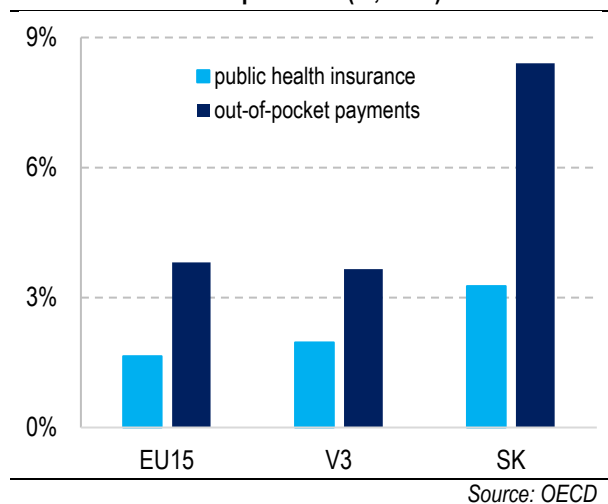
<sup>98</sup> The MoH SR reviews buying prices of devices and lowers the prices of procedures by taking them into account.

<sup>99</sup> Slovak data are based on average reimbursements by HIC for procedure codes 5600 (MRI) and 5200 (CT) in December 2017. Czech data are based on reimbursements according to regulation No. 201/2018 for procedures 89713 and 89615 valid according to point values from July 1, 2019.

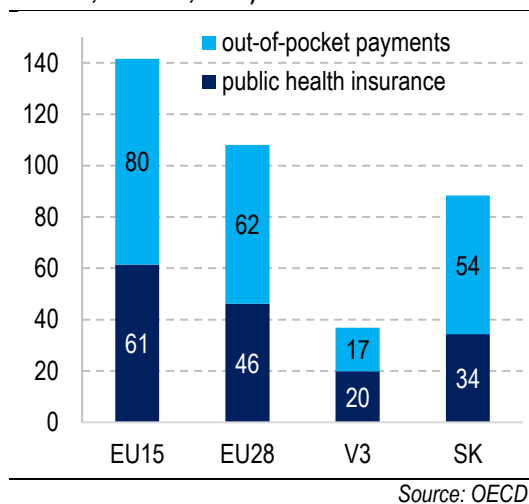
## 8 Medical devices

In 2018, 183 million euros from public resources were spent on medical devices.<sup>100</sup> Slovakia spends considerably more PHI resources on medical devices than the neighbouring V4 countries (graph 53; Graph 54). Medical devices comprise for example bandages, nappies, hearing aids or wheelchairs.

**Graph 53: Proportion of expenses on medical devices in total healthcare expenditure (% , 2017)<sup>101</sup>**



**Graph 54: expenses on medical devices (per citizen, in euros, 2017)<sup>101</sup>**



**Measure:** Procure incontinence products centrally (2.2 million euros potential).

Expenditure review project in Všeobecná zdravotná poisťovňa has estimated a savings potential of central procurement of nappies in VŠZP at 1.7 – 2.6 million euros. Centrally procured nappies can be delivered to bulk purchase sites (for example social service facilities). The measure has a savings potential of 2.2 million euros, of which 1.1 million euros will be achieved in 2020.<sup>102</sup>

**Measure:** Extend international comparison by other countries (potential 3.8 million euros).

Similarly to pharmaceuticals, prices of medical devices are compared with foreign countries. However, the prices are compared only to the Czech Republic at the moment due to insufficient interconnection of data to foreign databases. Savings potential can be achieved by extending this comparison to other countries.

**Measure:** Incontinence products – implement a basic functional type (potential 14 million euros).

Czech state health insurance company conducted a review of reimbursement system of incontinence products in 2017 and defined new maximum thresholds for reimbursements because like in Slovakia, they were being misused and prescribed excessively. Based on expert estimates, on average 90% people who live in nursing homes or social service facilities suffer from incontinence, while long-term average in western EU countries is around 50 – 60%. This situation is not caused by objectively worse health conditions of the citizens, but by overprescription which is stimulated by current reimbursement system (absorbency of the product etc.).

If unit prices become more realistic, overconsumption is eliminated by better review activity and Czech reimbursement model is applied, we can expect potential savings of 14 million euros for devices.

<sup>100</sup> Source: NHIC, report L02\_ZP\_R\_2018

<sup>101</sup> The data represents the sum of items “Therapeutical appliances and other medical goods” and “Other medical non-durable goods”. The comparison is indicative, there can be significant methodological differences in reporting between countries.

<sup>102</sup> Source: Implementation Plan of VŠZP: spending review – value for money and increased effectiveness of processes

## 9 Special medical material

**PHI expenses on special medical material (SMM) in 2018 were 83 million euros.**<sup>103</sup> SMM includes invasive medical devices which are used almost exclusively in inpatient care. Reimbursement system includes approximately 2,800 different types of SMM. There are catheters for 20 euros as well as heart implants for over 100 thousand euros. Hospitals procure the material individually and then get the expenses reimbursed after the material is used for a specific patient.

**Measure:** Extend external referencing of SMM (potential 4.2 million euros).

SMM prices have been compared internationally with Czech Republic since 2016, which has brought in annual savings of 37 million euros.<sup>104</sup> By extending the comparison to other countries, further savings can be achieved.

**Measure:** Create basic functional type for SMM (potential 4 million euros).

Unlike pharmaceuticals, the current division of SMM into groups is insufficiently related to the amount paid. Various types of goods are included in the groups and the maximum amount to be paid in a group often does not correspond to real prices. Creation of payment groups consisting of interchangeable SMM products and determining maximum payments amounting to the cheapest in the group would increase transparency of pricing and patient entitlement.

**Measure:** Set the payments to the cheapest procurement prices for hospitals (potential 3.7 million euros).

If health insurance company reimbursement was set to the cheapest procurement price, it would encourage other hospitals to provide pricing information to one another and purchase SMM more efficiently.

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<sup>103</sup> Source: NHIC, report L02\_ŠZM\_2018

<sup>104</sup> Source: Interim implementation report 2018. [https://www.vlada.gov.sk/data/files/7386\\_priebezna-implementacna-sprava-2018.pdf](https://www.vlada.gov.sk/data/files/7386_priebezna-implementacna-sprava-2018.pdf)

## 10 Waiting for healthcare

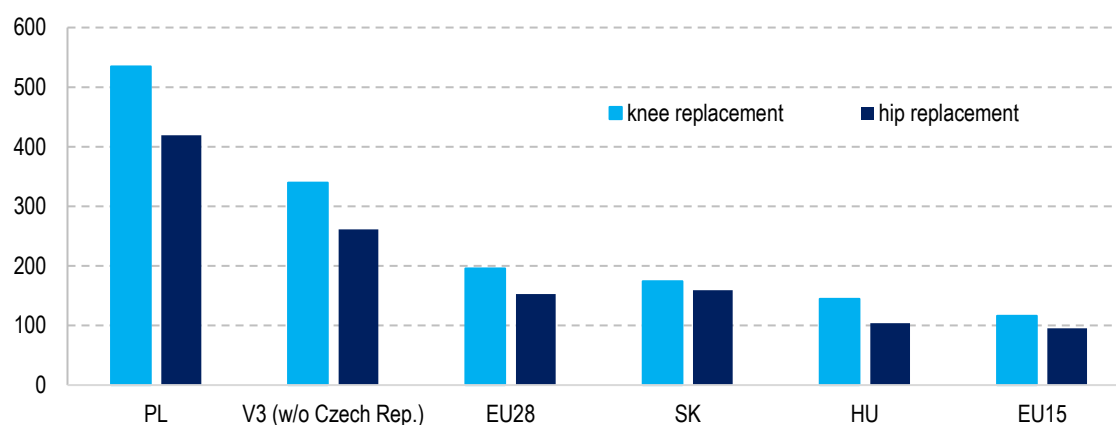
In Slovakia, waiting period for healthcare (HC) is currently monitored by waiting lists; however, they do not include the most common cases when a patient does not get HC immediately. The new hospital network reform of the MoH SR defines a new list of waiting periods for inpatient care. Outpatient procedures should be defined in the same way.

One example of waiting period which need not be reported are referrals to specialists, MRI and CT examinations or waiting for surgeries in case of severe diagnoses such as prostate cancer. The wait can extend to several weeks or months in some cases. The waiting period differs from one provider to another. Informed patients could adjust their choice of physician and get healthcare sooner.

International comparisons only concern waiting periods for non-acute procedures (they have lower priority in the system than urgent healthcare). In case of some surgeries where the waiting period is longer than 3 months, patients in Slovakia are added to a waiting list. Surgeries most frequently included in waiting lists are knee, hip and heart surgeries.

Regarding joint surgeries, the waiting period in Slovakia does not differ significantly from the EU average; Slovakia achieves much better values than Poland and slightly worse than Hungary (graph 55). Waiting periods differ considerably in different towns (table 34) and also among health insurance companies (table 35).<sup>105</sup> Waiting period for knee replacement in Žilina is 300 days on average, whereas in the hospital in Bojnice, it is less than 100 days.

Graph 55: Average waiting period for joint replacement (in days, 2017)



Slovakia does not report this data to OECD, waiting lists from health insurance companies' data for 2018 were used for comparison. Source: OECD  
The comparison is indicative, there can be significant methodological differences in reporting between countries.

<sup>105</sup> Note: only patients added to the waiting lists after January 1, 2017 were included. Some patients did not necessarily appear in the waiting list at all if they had been scheduled for surgery within 3 months.

**Table 34: Example of waiting period variability for knee surgery according to facilities with the highest volume of procedures**

	Average waiting period for “TEP knee replacement” surgery (in days)	Number of patients who underwent the surgery in 2018 (from the waiting list)
Martin	180	239
Bratislava – Petržalka	188	229
<b>Žilina</b>	<b>307</b>	166
Prešov	108	156
<b>Bojnice</b>	<b>97</b>	142
Topoľčany	112	136
Košice – Západ	153	114

*Source: health insurance companies' data*

**Table 35: Average waiting period for a planned surgery according to health insurance companies (in days; 2018)**

Type of surgery	VšZP	Dôvera	Union
TEP knee replacement	176	172	139
TEP hip replacement	158	163	177
Percutaneous transluminal coronary angioplasty	134	154	186

*Source: health insurance companies' data*

**Measure:** Extend data collection by most frequent situations when patient has to wait for healthcare.

## 11 Staff

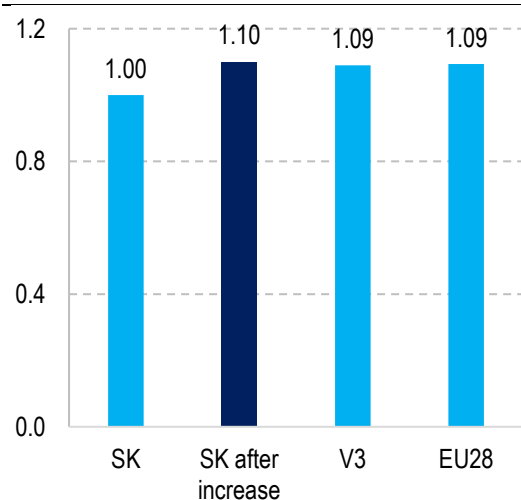
### 11.1 Staff remuneration

In 2018, a significant increase in staff salaries was approved. The salaries of nurses and other non-medical staff should have increased by more than 10% in the next year beyond normal increase. Besides salary increase based on the so-called automatic salary increase mechanism, surcharges for night, weekend and holiday work have been increased. The salary of paramedical staff in outpatient and inpatient settings should have increased by further 10% beyond automatic salary increase<sup>106</sup>, which was intended not only to ensure a one-time increase, but to improve their salary conditions compared to average salary in the long run. The goal of this policy measure is to make professions with shortage of staff more attractive. **Overall increase in staff salaries in healthcare should have amounted to 197 million euros in 2019.** Whether the salaries really have been fully increased will be confirmed as soon as data about salaries for the year 2019 will be made available. Based on data available at the moment, nurses' salaries do increase (Table 36).

Salaries of nurses in Slovakia now amount to 1.1 multiple of the average salary and will now be comparable to V3 and EU28 countries (Graph 56).

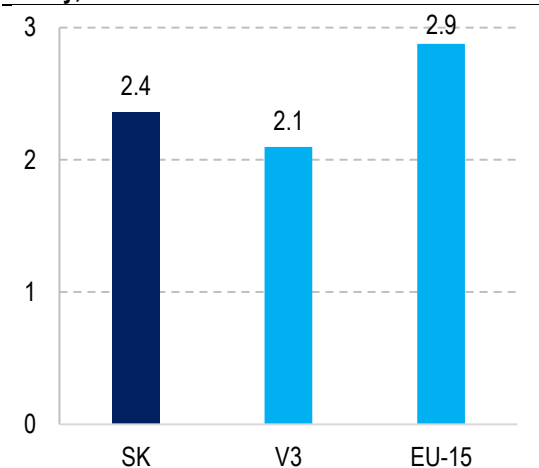
Salaries of Slovak doctors in inpatient facilities are higher than in V3 countries, however, they are still approximately 10% lower than the average in EU countries with available data. Comparison of revenues of outpatient physicians who are often self-employed is not available (Graph 57).

**Graph 56: Nurse salary as a multiple of average salary, 2017**



Source: OECD

**Graph 57: Doctor salary as a multiple of average salary, 2017**



Source: OECD

<sup>106</sup> The increase concerns all paramedical healthcare employees except radiologists and pharmacists. Nurses represent a vast majority of them.

**Table 36: Total actual salary obtained by paramedical healthcare staff\*\* in public inpatient/outpatient HC per quarters**

Total actual salary obtained by paramedical staff in inpatient care, in million euros	total salary	components of salary		increase of total salary compared to previous year/quarter	increase compared to the same quarter last year
		tariff salary	other*		
<b>2017 all year</b>	<b>325</b>	<b>211</b>	<b>114</b>	-	-
<b>2018 all year</b>	<b>341</b>	<b>214</b>	<b>127</b>	<b>5%</b>	-
2017 Q1	78	55	24	-	-
2017 Q2	80	54	26	1.8%	-
2017 Q3	83	50	34	4.4%	-
2017 Q4	83	52	31	-0.1%	-
2018 Q1	81	55	26	-2.7%	3.3%
2018 Q2	83	54	28	2.1%	3.6%
2018 Q3	87	50	37	5.6%	4.7%
2018 Q4	90	55	36	3.4%	8.5%
2019 Q1	93	63	30	2.9%	14.8%
2019 Q2	98	63	35	5.5%	18.6%

\* surcharges, compensatory salary, bonuses, personal salary, fixed allowance, overtimes, salary for inactive on-call time, supplementary payment, other salary, compensation for inactive on-call time, compensation for military preparedness

Source: NHIC

\*\* all healthcare professionals except physicians, dentists, pharmacists and physics

## State-regulated salaries

**At the moment, the state specifically determines or regulates salaries of healthcare professionals in inpatient facilities** regardless of whether the facility is private or public. Employee remuneration is derived from a fixed multiple of average monthly salary of an employee in the Slovak economy determined by the Statistical Office of the Slovak Republic for calendar year two years prior to the calendar year when the basic salary component is calculated – so-called automatic salary increase mechanism.<sup>107</sup> Specific multiple of the average salary differs for various categories of employees.

### This system has several possible drawbacks:

- Salaries represent almost 60% of operational expenses of hospitals. Besides automatic salary increase mechanism, salary increase in hospitals is influenced by collective agreements. Hospitals should be able to negotiate with health insurance companies to reimburse at least the increase of payments due to legal growth of personnel expenses (automatic salary increase and social packages). If this does not happen, their operating income gets worse. Legislation determines the increase of expenses for hospitals, however, it leaves the discussion about revenues to health insurance companies and prospective budgets open.
- OECD (2017c) recommends in its overview of Slovak healthcare system that physicians' salaries should not be bound to average salary in the country. Cancelling automatic salary increase mechanism and changing to a new system with a bigger emphasis on remuneration for procedures and their quality could bring more value for money (higher quality while maintaining the overall salary expenses).

**An alternative to the current situation is to keep the increase of total salary package bound to average salary, but to let hospitals decide how to distribute the resources among employees, which will allow them to reward performance and quality.**

**Measure:** Re-evaluate the conditions of automatic salary increase mechanism.

<sup>107</sup> Law No. 578/2004 Coll. on Healthcare Providers.

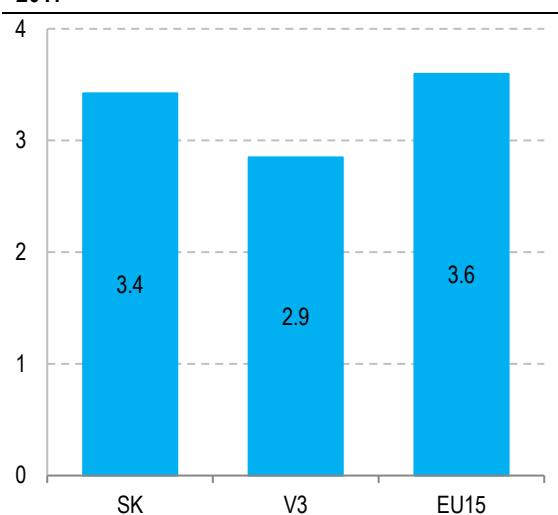


## 11.2 Staff numbers

There are enough physicians in Slovakia compared to V3 countries (Graph 58), the problem is in their distribution compared to EU15 countries. Compared to Western countries, Slovakia has too many specialists and too few general practitioners (Graph 59); what is more, more than 40% of GPs are older and there are fewer starting young doctors.

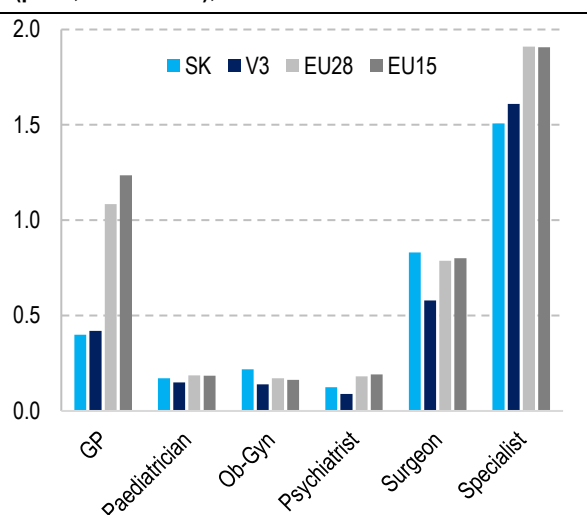
Shortage of general practitioners makes it impossible to make outpatient care more effective because the existing ones do not have the capacity to provide wide scope of practice (Chapter 5).

Graph 58: Number of doctors (per 1,000 citizens), 2017



Source: OECD

Graph 59: Number of doctors per specialisation (per 1,000 citizens), 2016\*

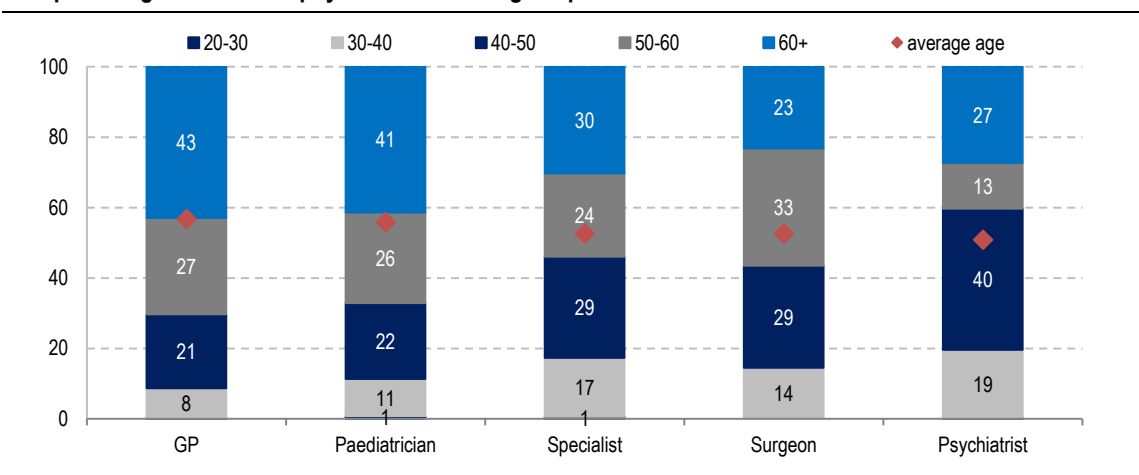


Source: OECD

\* Data for Slovakia taken from NHIC on June 30, 2016, according to OECD methodology.  
Data for V3 only in category GP, otherwise only Poland.

Average age of general practitioners is high and it keeps growing. In 2016, 23% of physicians were aged over 65 with the average age of 57. Not many young doctors start their practice. If this tendency does not change, it will not be possible to broaden their competences as recommended in Chapter 5.

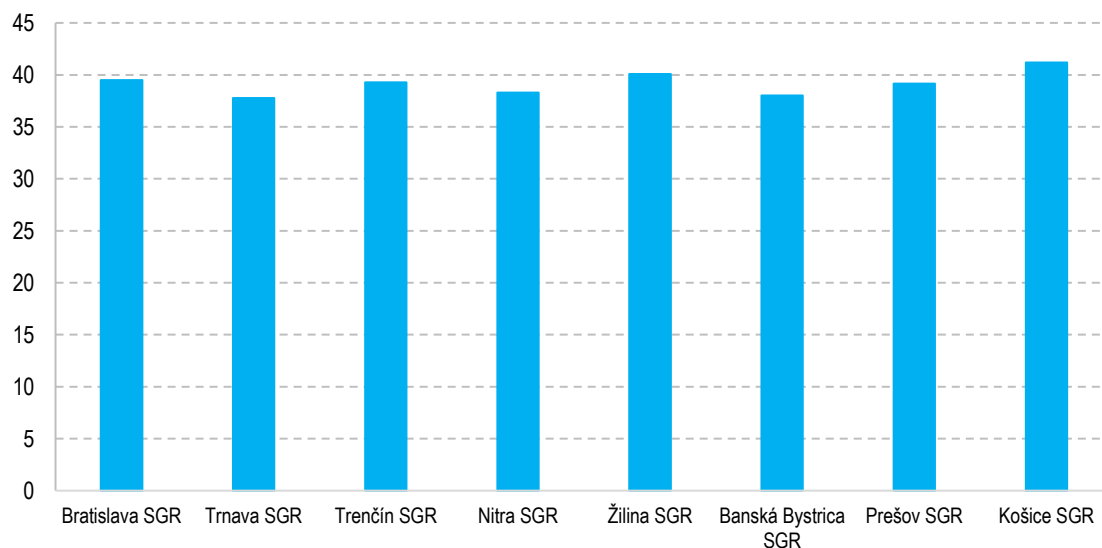
Graph 60: Age structure of physicians according to specialties



Source: Slovak Medical Chamber

**Accessibility of general practitioners on regional level virtually does not differ (Graph 61), but the problem can appear in small municipalities.** Physicians abroad tend to concentrate in big cities and their transfer to rural areas has to be stimulated by suitable motivations. The assessment of accessibility is usually done based on the number of physicians in population, however, it is also appropriate to take into account their age structure which can differ significantly in towns and smaller municipalities.

**Graph 61: Number of general practitioners per 100,000 citizens, 2017**



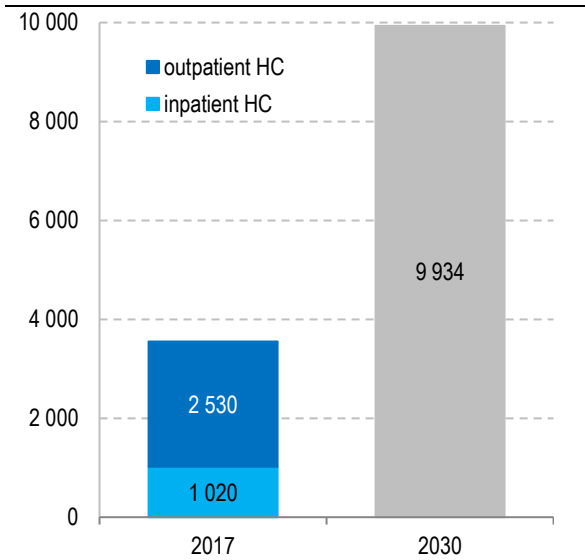
Source: NHIC  
SGR = self-governing region

**Compared to the most developed EU countries, considerably fewer nurses work in Slovakia.** International comparison of the number of nurses is not straightforward since nurses have differently defined competences and education requirements in different countries. **According to the MoH analysis considering the current competences of nurses, Slovakia lacks at least 3.6 thousand nurses.**

**If Slovak nurses had similar competences to foreign countries, the shortage would amount to 14 thousand.** Rough comparison of countries based on OECD data in one category shows too high of a shortage of nurses because Slovakia reports the data to incorrect category of nurses working in other than healthcare facilities. A correct calculation follows from a comparison within the right group and among countries with similar reporting. The calculation was adjusted by differences in age structure of the population (and thus the need of healthcare) in individual countries. The method of calculation is stated in the Annexes.

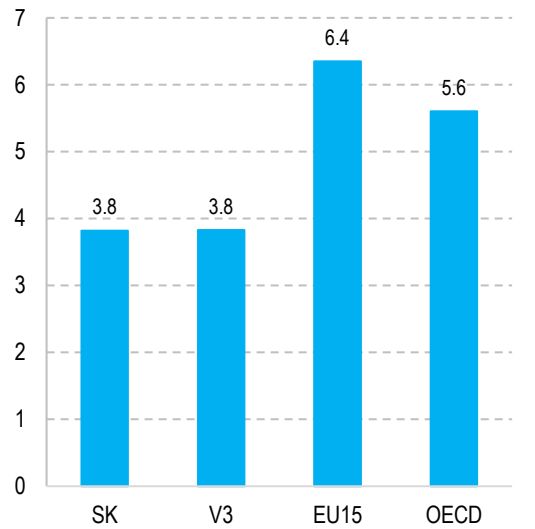
**Age structure of nurses is also unfavourable** – as little as 15% of nurses are younger than 35. If the current tendency continues, the shortage of nurses will increase considerably in the future. The MoH analysis shows that in 2030, further 6,400 nurses will lack in Slovakia in addition to the shortage currently estimated for 2017. The Institute of Health Policies recommends to enrol 2,300 students more each year just to compensate the age structure.

**Graph 62: Number of lacking nurses according to statistical survey and MoH prognosis**



Source: MoH

**Graph 63: Number of nurses adjusted by age structure of the population (per 1,000 citizens), 2017**



Source: OECD, NHIC, calculations by VFM Division

### 11.3 Increasing the attractiveness of general medicine and profession of nurses

**The specialty of general medicine is not attractive for young doctors.** Only 9% of medicine graduates choose this specialty, whereas in the EU, the proportion is 17% (WB, 2018a). Some of the causes are lack of contact with the specialty during studies and low financial remuneration compared to specialists which stems mainly from different reimbursement mechanisms.

**It is quite costly for young general practitioners to start their own practice.** The current situation is problematic also due to the fact that when physicians retire, they often sell their offices as companies with the entire capitation basis to a new doctor. For a young doctor, such a purchase of practice can represent a large initial investment. A loan can be worth it for a young doctor only if they receive enough patients in the capitation basis. Such a situation motivates doctors to buy large capitation bases of patients which can have a negative impact on accessibility and quality of healthcare. When a GP dies, patient documentation is transferred to the corresponding self-governing region. However, the region does not have the competence to reassign the patients to a doctor in their catchment area. Accessibility of healthcare can thus be compromised. If self-governing regions had the competence to assign a new general practitioner in specific cases, it would improve the accessibility of healthcare e.g. by more even distribution of patients among doctors.

**The majority of graduates in nursing care do not start working in Slovakia.** Only 44% of nurses start working according to the MoH, which means that 56% do not finish their studies or start working outside of Slovakia.

**In order to reverse the unfavourable situation, the MoH SR launched a residential program in 2013 to strengthen the numbers of general practitioners** as well as improve their education in order to strengthen primary healthcare. The residential programme should also reduce the number of visits to specialised doctors' offices and save funds by reducing the referrals of patients to specialists. **The programme was made available for doctors of other specialties and nurses in 2019.** Before further supporting the programme, it is necessary to evaluate its efficiency and effectiveness of funds used in comparison with alternative solutions. In 2014, 258 participants took part in the residential study programme and 120 finished it<sup>108</sup>. Interest in residential programme

<sup>108</sup> Data from February 2019.

for paediatricians has been declining since the first year when 30 students applied. In 2018, only 7 applied. The residential programme has strengthened the staff capacities of doctors in Slovakia only minimally in the 3 years of its existence. The MoH SR estimates that approximately 1,500 physicians are still lacking.

**The MoH SR suggested financial incentives for nurses in 2018** with the estimate that at least 188 more nurses will start studying each year while the total number of student places will remain unchanged. A stabilisation contribution would be reimbursed by the Slovak Education Support Fund (FNPV). The contribution was determined as 2,000 euros per school year.

**The shortage of general practitioners and nurses in offices can be partially solved by connecting offices in more integrated health centres (Slovak – “policlinics”)**, which can simplify and coordinate patient treatment (WB, 2018b). Although policlinics currently group general practitioners and specialists, they *de facto* work as independent units. More integrated health centres can distribute tasks among doctors, distribute workload and provide benefits thanks to their scale – for example, such a health centre can afford to buy a more expensive machine. At the moment, almost each general practitioner works with one nurse. Integrated clinics can create conditions in which one nurse can assist several doctors. Part of this adjustment could be the transfer of a portion of nurses’ administrative duties to non-medical administrative staff (Chapter 11.4). This kind of system functions for example in the United Kingdom.<sup>109</sup>

**Measures:**

- Increase in the number of nurses by the current shortage (3,600) in the next 10 years represents an increase in expenses connected to salaries of 107 million euros per year, of which 10.7 million euros in the first year.
- Include general medicine in the study of other selected medical specialties and in master’s degree and strengthen the practice.
- Support the creation of integrated health centres where doctors can join their capitation bases.
- Adjust salary regulation of staff in inpatient care while keeping the redistribution of staff resources up to hospitals.

## 11.4 Competences, staff mix

**Transfer of competences to lower levels of healthcare staff helps better use resources and improve healthcare.** Several Western countries have transferred part of specialist duties to general practitioners, from physicians to nurses, from gynaecologists to midwives and from nurses to nursing aides and orderlies. Such policy measures increased the accessibility of healthcare, shortened waiting periods and improved the satisfaction of patients all while having a positive or neutral impact on the expenses (OECD, 2017d).

**Broadening of general practitioners’ competences was determined by the Ministry of Health to be one of the key measures in primary care within the Strategic Healthcare Framework for 2014 – 2030, however, the process stopped after 2015.**

**General practitioners could take over a part of specialist tasks in many other areas.** These include more complex examinations and treatment of diabetics, patients with thyroid diseases or ear infections. **These procedures currently cost over 9.7 million euros in specialist offices** (calculation in the Annexes).

**One serious problem that hinders the broadening of general practitioners’ competences is their shortage (Chapter 11.4). Moreover, they also lack equipment to perform these broader competences.** According to

<sup>109</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/507493/CfWI\\_GP\\_in-depth\\_review.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/507493/CfWI_GP_in-depth_review.pdf)

World Bank, many doctors do not possess an ECG, respiratory monitor for asthma or equipment to perform small surgical procedures. Because of these factors, patients with many acute or chronic diseases get referred to a specialist.

**What is more, general practitioners are not educated enough to perform broader competences.** When the residential programme was launched in 2013, new curriculum for general practitioners was introduced, stating many skills a physician could use to perform broader competences. However, the World Bank has evaluated that they are more focused on training of general practitioners working in hospitals and do not reflect the needs and context of GPs working in independent outpatient offices. Yet, the majority of general practitioners work in an independent office in a community. Furthermore, new curriculum was only introduced when the so-called residential programme was launched, which is why it had not covered older physicians, who form the majority of general practitioners. World Bank also states that the broadening of competences in 2014/2015 did not succeed because particularly older general practitioners felt insecure about the new examinations.

**The problem with low numbers of general practitioners can be resolved also by partial transfer of competences to nurses.** At the moment, nurses in Slovakia work as a physician's assistant, while in Western countries, they run community clinics on their own and provide preventive care and management of chronic diseases. Slovakia is also one of the few European countries without a specialty of nurse in primary care or in community (WB, 2018b). **Before broadening competences, the number of nurses must be increased** (Chapter 11.2). Another option is to transfer the current competences and workload of nurses to non-medical staff. As was already mentioned, nurses in general practitioners' offices spend a lot of their time by administrative tasks. Part of these activities could be transferred to administrative employees.

**Measures:**

- Provide material and technical equipment by the state (direct purchase, grant, advantageous loan)
- Provide training and necessary practice in new competences for older physicians or regular tests for everyone
- Re-evaluate staff mix, transfer competences from doctors to nurses and from nurses to administrative staff

## 11.5 Remuneration mechanisms

**The current situation regarding the majority of remuneration mechanisms of general practitioners does not motivate them to perform new competences.** General practitioners are paid per capitation, which does not motivate them to provide care to more complex patients. On the other hand, specialists are paid per procedure and are motivated to perform an excessive number of procedures.

World Bank (WB, 2018b) offers solutions to readjust the system more appropriately:

- Doctors with more patients with chronic diseases or patients coming from disadvantaged groups in their capitation basis should be remunerated more when providing complex care.
- The portion of variable capitation in their revenue should be increased. However, at the moment, the majority of payments (fixed capitation) only reflects the age distribution of registered patients.

**The current system of fee-for-service can also promote an excessive volume of procedures performed by specialists** who can be motivated not to refer their patient back to their GP for a procedure. More in the Annexe about remuneration mechanisms. At the same time, the transfer of competences in case of procedures can face a backlash from specialists because they bring in large revenues.

**For an effective care for patients with chronic diseases, coordination of general practitioners and specialists is crucial.** This coordination can be motivated by correctly set remuneration mechanisms, e.g. pay-for-performance, which reflects the care of chronically ill patients.

<b>Box 11: Remuneration mechanisms of outpatient physicians</b>			
<b>Remuneration mechanism</b>	<b>Providers</b>	<b>Advantages</b>	<b>Disadvantages</b>
<b>Fee-for-service (FFS)</b>	specialists	transparent reporting, accessibility of HC, transparency	excessive number of procedures, no cost control (disadvantage for resource managers)
<b>Capitation</b>	general practitioners	relatively simple reporting, flexibility for the provider, cost control (advantage for resource managers)	motivates to pick “easier cases” whose treatment is less expensive, which translates into lower accessibility of HC

*Source: OECD (2016)*

- Measures:**
- Prepare a suitable mix of fixed and variable capitation and fee-for-service for general practitioners along with measures which will save time for the physicians (increase the number of GPs, eliminate redundant visits).
  - Adjust remuneration mechanisms for specialists
  - Adjust financial mechanisms to motivate coordination between GPs and specialists

## 12 Standard diagnostic and treatment procedures

**Standard diagnostic and treatment procedures are one of the most effective tools in order to achieve high-quality and cost-effective healthcare.** General guidelines for evidence-based diagnostic and therapeutic procedures and best practice are issued by WHO and many countries subsequently implement their own, more detailed guidelines, such as the National Institute for Health and Care Excellence in the UK. According to WHO (2007), quality standard guidelines have many advantages for HC providers, healthcare institutions and patients:

- **They increase safety and quality of treatment** because clear guidelines for up-to-date procedures help healthcare staff avoid mistakes and prevent arbitrary choices of inappropriate and obsolete procedures.
- **They help keep expenses in check.** WHO recommends using cost-effectiveness as one of the criteria for creation of procedures. When the procedures are followed, they help prevent waste of resources (e.g. excessive MRI examinations or simple examinations performed by a doctor instead of a nurse).
- **They promote efficient investments** (e.g. in psychotherapy, which is the main type of treatment for mild depression).
- **They provide the basis for evaluation of correctness of procedures** by regulators, health insurance companies and patients.
- **They improve the accessibility of quality HC** by unifying the level of HC per various providers and in different regions.
- **They help improve resource planning**, for example necessary pharmaceuticals, material, staff and premises according to the procedures.

**Standard procedures were created slowly in Slovakia and their use was not stipulated by the law.** After a change of Law No. 576/2004 Coll. (from January 2018), healthcare is provided correctly if it is provided according to standard procedures. The process of establishment of standards was launched in 2017 and procedures for 31 areas came into effect in 2019. Further 150 areas are planned<sup>110</sup>.

### 12.1 Case study – Procedures in mother and child care

**The consequences of lack of standards and not taking into account up-to-date procedures are well illustrated by mother and child care** during pregnancy, childbirth and after childbirth.

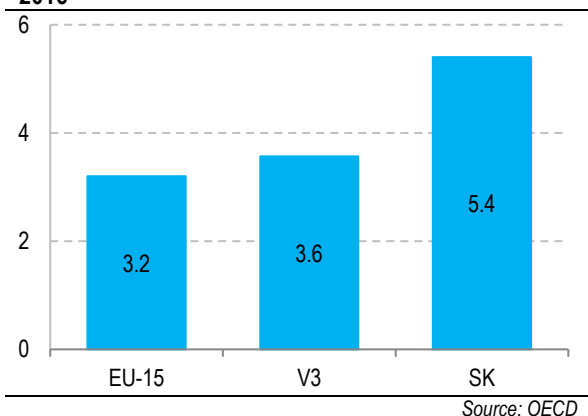
**Poor outcomes of mother and child care in Slovakia are reflected in infant mortality which is one third higher than the average in V3 countries (Graph 64).** High infant mortality rate in Slovak marginalised Romany communities accounts for a significant part of this difference, however, even in the rest of the Slovak population, there are still more infant deaths than in the neighbouring countries (Graf 65). Poor health outcomes in marginalised Romany communities are analysed in Spending Review regarding groups at risk of poverty<sup>111</sup>.

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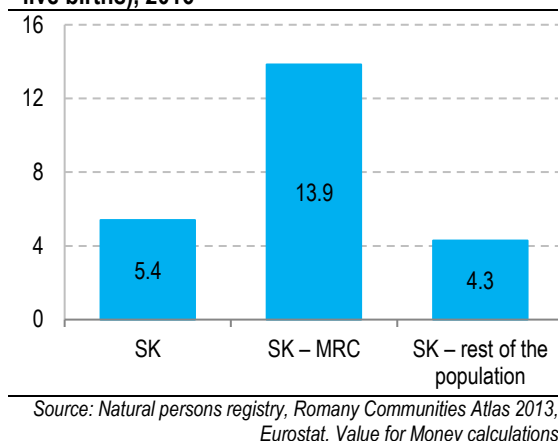
<sup>110</sup> <https://www.health.gov.sk/Clanok?standardne-diagnosticke-postupy>

<sup>111</sup> <https://www.finance.gov.sk/sk/media/tlacove-spravy/uhp-revizia-vydavkov-skupiny-ohrozene-chudobou.html>

**Graph 64: Infant mortality – benchmark (number of deaths in the first year of life per 1,000 live births), 2016**



**Graf 65: Infant mortality – per population groups (number of deaths in the first year of life per 1,000 live births), 2016**



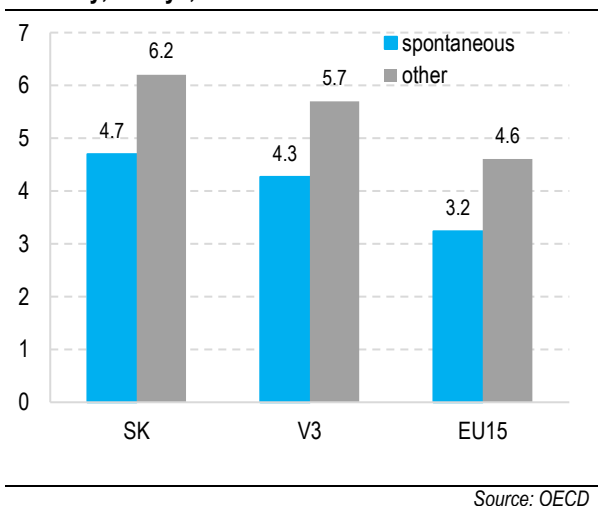
According to WHO standards, many procedures mothers and children have to undergo in Slovakia are risky, redundant, they waste human, financial and spatial resources during pregnancy, childbirth, immediately after childbirth and after being discharged from the hospital.

The main indicator of ineffectiveness of obstetric care is length of stay in hospital. In case of spontaneous delivery, women stay at hospital for too long – 4.7 days in average, which is longer than in V3 countries and one third longer than in EU15 countries (Graph 66). WHO (2015) recommends at least 24-hour-long stay and subsequent discharge only if the mother is not bleeding, if mother and child do not manifest signs of infection and breastfeeding is without problems. One of the shortest average hospital stays is in the United Kingdom (1.4 days). In the UK, some women are discharged after spontaneous delivery without complications after 6 hours, after a C-section without complications on the following day.

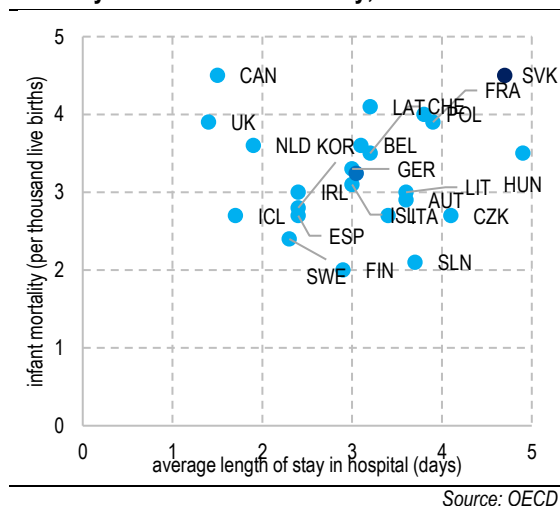
**Shorter hospital stay is not related to worse outcomes (Graf 67).** Iceland, Sweden or the Netherlands have a short average length of stay after spontaneous delivery and very low mortality.

The reasons for a long hospital stay in Slovakia are numerous: woman admitted in the early stages of labour, excessive procedures, complications during labour related to incorrect procedures, unjustified Caesarean section, inappropriate post-partum procedures which delay the readiness of mother and child to go home and insufficiently developed social care and healthcare after discharge.

**Graph 66: Average length of stay in hospital by type of delivery, in days, 2017**



**Graf 67: Relation of ALOS in case of spontaneous delivery and total infant mortality; 2017**





## 12.2 Inappropriate procedures before childbirth

**Women visit prenatal consultations too often and examinations are performed exclusively by a specialist gynaecologist, which makes the care overpriced.** In Slovakia, women go to 12 prenatal visits after their pregnancy is confirmed, while in Denmark they go to 10 and in Norway to 8.<sup>112</sup> In Great Britain, women only fill in a questionnaire at a midwife's office. The midwife then evaluates the pregnancy as high-risk or low-risk and determines the necessary frequency of visits accordingly. Best practice in Western countries is that consultations are mainly done by midwives and general practitioners, while in Slovakia, women see exclusively their gynaecologist. In Great Britain, some women with low-risk pregnancy never meet their gynaecologist before childbirth. Specialists have their offices in hospitals and only take care of high-risk cases during labour.

**Women undergo many redundant examinations during gynaecologist visits before childbirth, which wastes further resources.** Generally, WHO (2016) recommends blood and urine examination, diabetes testing, drug tests, but also questions about their partner's eventual violent behaviour for the mother and palpation exam and one ultrasound before the 24<sup>th</sup> week of pregnancy in order to detect congenital disorders for the baby. At the same time, WHO does not recommend routine ultrasound or CTG examinations. Women in Slovakia undergo many examinations which they would not encounter at all in case of low-risk pregnancy in Denmark, Norway or England. **By eliminating these examinations, it is possible to save over 2 million euros per year.**

**Table 37: Savings by eliminating redundant examinations during pregnancy, 2017**

Redundant examinations	price in euros
Initial pelvic examination	9
Ultrasound	10
CTG	7
Glucose tolerance test	2
AFP blood test	4
Streptococcus test	13
<b>Expenses on redundant examinations per 1 pregnancy</b>	<b>44</b>
number of low-risk pregnancies	50,275
<b>savings in million euros</b>	<b>2.2</b>

Source: HIC data, NHIC

## 12.3 During childbirth

**The majority of women in Slovakia give birth in regular hospitals accompanied by expensive specialised staff.** At obstetrics ward, each woman is attended by a doctor for at least some time and several nurses taking turns. In the Western countries, low-risk births are usually performed in birth centres and women are attended mainly by midwives during their stay and labour. In England, approximately 54% of births take place in a birth centre, 50% of births are led by a midwife and 10% by a general practitioner or other staff member.<sup>113</sup> The rest of the births are performed in a hospital in case they are determined as high-risk originally or acutely. There are no specialist gynaecologists in birth centres, everything is done by midwives. Even in hospitals, doctors often do not assist in the labour – each woman is attended the whole time by her midwife whom she knows from the consultations, doctor only supervises, consults and assists if necessary (NHS, 2018).

**Many women with low-risk pregnancy undergo redundant or even health-threatening procedures during childbirth.** These include episiotomy, enema, inducing and accelerating delivery e.g. by oxytocin, artificial rupture

<sup>112</sup><https://zenskekruby.sk/velke-porovnanie-tehotenskych-vysetreni-slovensko-nemecko-dansko-norsko-com-sa-odlisujeme-od-zahranicia/>

<sup>113</sup> <https://digital.nhs.uk/data-and-information/publications/statistical/nhs-maternity-statistics/2017-18>

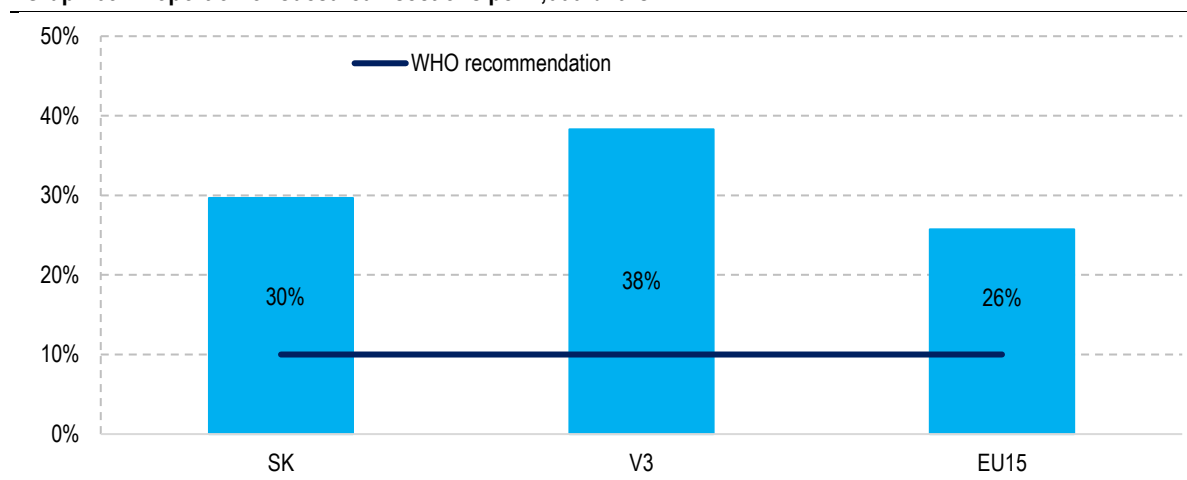
of membrane or putting pressure on the belly (WHO). On the other hand, WHO recommends procedures which are not usual in Slovakia even though they improve the course of labour and health outcomes for the woman and the baby, such as free-of-charge analgesics on demand (epidural/opioids) or promotion of woman's movement and choice of position during labour.

**As much as 30% of births are done via Caesarean section in Slovakia, even though the WHO recommendation is 10%.** A justified Caesarean section can save the lives of mother and child, but an unjustified one can endanger it and cause long-term harm. International statistics state that infant mortality decreases with an increase in Caesarean sections until their proportion achieves 10% of all births. There is no evidence about better outcomes for proportions over 10% (WHO, 2015a). On the other hand, according to a study by Sandall et al. (2018), Caesarean section is related to many risks, either short-term (complications due to anaesthesia, infections, thromboembolic diseases, respiratory problems of the newborn, problems with breastfeeding), or long-term or even permanent (development of asthma and obesity for the child, complications in future pregnancies for the mother).

The proportion of Caesarean sections is high all over the world and has increased in the recent years. Part of this situation can be justified due to more frequent obesity, older mothers-to-be or primiparas. WHO (2018a) considers a large part of them unjustified and performed because of the mother (fear of pain, negative experience), health professionals (focus on saving patient's life without sufficient regard for risks, need to accommodate the patient) or specific organisational, social and cultural factors.

**Unjustified Caesarean sections also mean wasting resources.** These labours are more expensive and related risks bring further expenses on follow-up treatment of acute and chronic diseases.

**Graph 68: Proportion of Caesarean sections per 1,000 births**



Source: OECD

**By reducing the proportion of Caesarean sections to the level recommended by WHO, it is possible to save as much as 1.9 million euros (Table 38).**

**Table 38: Savings if the number of Caesarean sections (CS) is reduced to WHO-recommended level (10%), 2017**

Number of live births	57,969
Number of CS	17,203
Number of CS at WHO-recommended level (10%)	5,797
Average reimbursement per admission for spontaneous delivery, in euros	654
Average reimbursement per admission for CS, in euros	820
<b>Savings if the number of CS is reduced to 10%, in million euros</b>	<b>1.9</b>

Source: NHIC, Statistical Office, HIC data

## 12.4 After childbirth

**Up-to-date procedures in post-partum mother and child care have been introduced into the standards only this year. Their lack up to now has been connected to health risks and waste of resources.** One of the main WHO recommendations (2018b) to promote health is the promotion of skin-to-skin contact of mother and baby immediately after birth, at least within the first hour. If this contact is refused, it can delay the start of breastfeeding, it worsens the baby's thermoregulation and is related to a risk of more difficult bonding of mother and child. This is why it is recommended to bathe the baby ideally not sooner than 6 hours after birth, best not sooner than in 24 hours. Promotion of breastfeeding reduces the risk of mortality and morbidity, improves health outcomes in this period and reduces the probability of the mother getting pregnant again too soon.

WHO recommends to keep the baby in the same room as the mother for at least the first 24 hours. In the UK, they are together the whole time and the woman can have a close person with her to help her and the staff with basic activities, such as bathing and weighing. The mother can create a bond with her child this way, she learns how to care about the baby and reduces the workload of the staff by taking care of some of the procedures.

**After discharge from hospital, Slovak mothers lack sufficient medical and social support in their community.** WHO (2013) recommends checking the mother's health condition, breastfeeding and healing of wounds, emotional status including symptoms of post-partum depression, atmosphere in the family, signs of domestic violence as well as problems with restarting painless sexual intercourse. In Great Britain, women after a short stay at hospital or birth centre are often visited at home in the first week by a midwife. Community centres and general practitioners are also available.

### **Measure – SDTP:**

- Prepare and approve standard diagnostic and treatment procedures.

### **Measures – Pregnancy and childbirth:**

- Implement SDTP for pregnancy and childbirth
- Eliminate redundant examinations during pregnancy
- Monitor the observance of SDTP and update existing SDTP for post-partum care
- Transfer competences from gynaecologists to midwives or general practitioners
- Establish baby-friendly birth centres outside of regular hospitals
- Demotivate Caesarean sections – educate women about the risks, implement the obligation to consult the risks with two physicians, unify reimbursements for physiologic childbirth and Caesarean section
- Adjust procedures in order to accelerate discharge from hospitals, including engaging the mother and close people in the care of the newborn
- Create capacities for home and community care after discharge

## 13 Healthcare systems

**Slovakia has a mixed healthcare system based on public health insurance and a mix of public and private providers. Similar model is functioning well in many Western countries such as the Netherlands or Germany. However, the Slovak system has the disadvantages of a pluralistic system without the expected benefits.** More health insurance companies mean higher operational expenses. Moreover, the health insurance companies do not compete in healthcare provision.

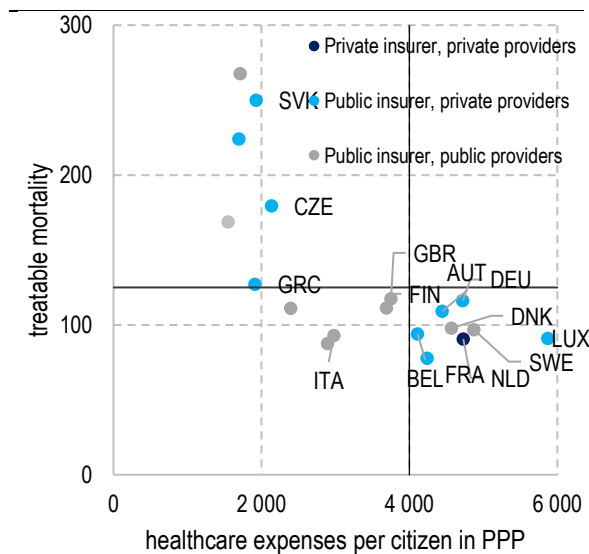
Slovak system can be improved by better management, resource allocation, medical procedures, financial mechanisms, digitisation, regulation and, from the point of view of health insurance, mainly:

- Definition of a basic package to which each insured person is entitled
- Easily accessible and transparent waiting lists for all regular and important procedures
- Rules for the use of PHI resources which have not been used for healthcare

**Many different types of healthcare systems exist in developed countries and it cannot be determined which one is the best.** Healthcare systems differ in the role of public and private sector. Two basic types are **centralised system** (e.g. in the UK where healthcare is financed from taxes and the state owns and manages the majority of providers) and **market system** (e.g. in Switzerland with many private health insurance companies, care at private providers' facilities is financed by contributions of economically active people, private insurance premium and high out-of-pocket payments). Many countries such as Slovakia, Canada or Germany use a **mixed system** where resource management, allocation and provision are ensured by the state and the market to a varying degree.

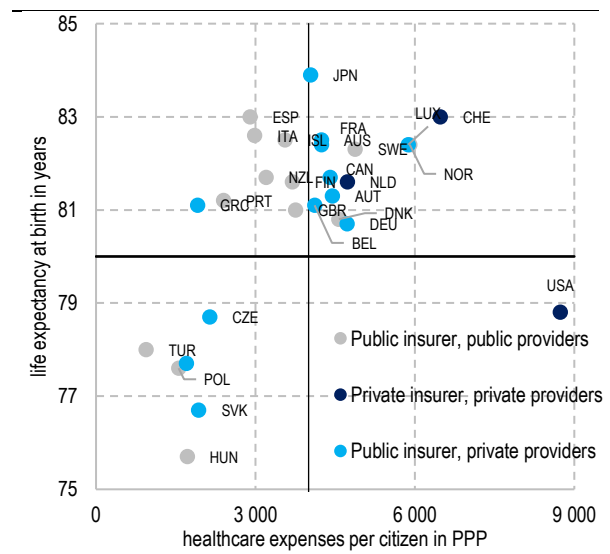
**Within each system, there are countries with worse and better outcomes and different amounts of expenses.** Graph 69 shows that countries from each group have similarly low treatable mortality. Countries with state-managed finances and providers (such as the UK) have slightly lower expenses. Graph 70 shows a similar story with more countries; one significant deviation is the USA which has the highest expenses and considerably worse outcomes than other rich countries.

**Graph 69: Treatable mortality and total healthcare expenses per citizen in PPP**



Source: Eurostat and OECD

**Graph 70: Life expectancy at birth and total healthcare expenses per citizen in PPP**



Source: Eurostat and OECD

## 13.1 Resources in healthcare

**In the majority of countries, the major part of healthcare resources comes from taxes or contributions of economically active people (public health insurance). It is not possible to say which system brings better health outcomes.** Taxes are typically the resource in centralised systems and contributions of economically active people in market systems with public health insurance. Differences in treatable mortality tend to follow the volume of healthcare expenses; at the same time, countries with a tax system spend less money while maintaining a comparable quality. Other resources are private health insurance and OOP (Chapter **Chyba! Nenašiel sa žiaden zdroj odkazov.**).

**Funding from taxes and contributions of the EAP is similar if the contributions are obligatory and everyone is entitled to healthcare, as is the case in Slovakia. In this case, taxes and contributions are used to create a system of solidarity.** All working people are obliged to pay contributions or taxes from their revenue which are added to the common resource package. This package then pays the care for all people, not only those who have contributed actively. The contributions of the EAP are, like taxes, de facto public resources and are a protective tool for everyone, particularly the vulnerable people, from high treatment expenses.

**In many countries with public health insurance system like Slovakia, part of the health sector is co-funded by taxes because the contributions of the EAP do not cover all expenses.** In Slovakia, this includes state payments for economically inactive citizens<sup>114</sup>. However, again, the resources for these payments come mainly from economically active citizens and richer people who fund the healthcare for economically inactive people and those prone to illness. **An efficient “state payment” is thus a legitimate part of a solidary system with the same approach to healthcare for all citizens.**

The advantages and disadvantages of various tax and contribution systems and an example of market-focused system of funding in the Netherlands can be found in the Annexes.

### 13.1.1 Basic healthcare package

**The scope of healthcare to which a citizen is entitled from the public health insurance is defined very broadly in Slovakia.** According to the Constitution, “the citizens shall have the right to free healthcare and medical equipment for disabilities under the terms to be provided by law”<sup>115</sup>. Legislative amendments<sup>116</sup> further define the types of care, diagnoses and procedures which are or are not reimbursed. However, these definitions are stated in different laws and are sometimes relatively broad, sometimes too complicated. When reimbursing certain diagnoses, it is not clear which procedures should be reimbursed and which should not.

**Many countries, mainly those with a public health insurance system similar to Slovakia, have a definition of a so-called basic healthcare package which clearly states what the patients are entitled to.** The basic package is similar across countries and differs in some conditions, e.g. the extent of OOP of insured persons in case of specific benefits. The size of the package changes in various intervals and should ideally be determined based on priorities and evidence about healthcare needs (for example, in the Netherlands, the package is determined by a state healthcare institute, Zorginstituut Nederland, based on expert assessments<sup>117</sup>).

**The important thing for an insured person is not only that their entitlement is defined by the law, but also how simply they can understand it.** For example, in Switzerland, the package is modified by several legislative standards. The Federal Office of Public Health publishes a brief summary for insured persons with clearly stated

<sup>114</sup> In the recent years, they have been defined as a percentage of average salary from two years ago (Law No. 580/2004 Coll.). From 2020, the whole state contribution package will bridge the revenue gap between collected contributions and necessary expenses.

<sup>115</sup> Constitution of the Slovak Republic, Article 40

<sup>116</sup> Law No. 577/2004, Government regulation No. 777/2004

<sup>117</sup> <https://www.zorginstituutnederland.nl/over-ons/taken/adviseren-over-en-verduidelijken-van-het-basispakket-aan-zorg>

benefits and their reimbursement. The state thus considerably facilitates healthcare expenses planning and decision-making about voluntary health insurance.

**The unclear definition of healthcare entitlement from PHI in Slovakia has consequences on the healthcare system in several areas:**

**1. Voluntary (private) health insurance – it is difficult to create a voluntary health insurance product** which would clearly reimburse HC beyond the basic package. Voluntary health insurance is most often used when an insured person evaluates the volume or extent of healthcare reimbursed from public resources as insufficient. Voluntary health insurance is a product of health insurance market whose features are determined by a system of compulsory health insurance. If, for example, the state clearly defines which procedures and services are reimbursed from public resources to every insured person (i.e. defines the basic package), health insurance companies can prepare various supplementary insurance products and offer them only to specific groups of insured persons (PHI has to be offered to everyone).

**2. Out-of-pocket payments – it is considerably more difficult to have an overview of OOP which are authorised,** physicians can more easily claim too high or illegal payments.

**3. Competition among health insurance companies –** health insurance companies in a pluralist system cannot compete with each other regarding their offer beyond basic package (more in Chapter 13.1.1).

<b>Measure:</b> Define a basic package to which each insured person is entitled from the PHI and present it in an approachable way by the Ministry of Health, HCSA and health insurance companies.
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## 13.2 Resource management

**Public resources, whether taxes or contributions of the EAP, are managed and reimbursed to healthcare providers either by one administrator – the state or the state insurance company (unitary system), or by several state and private insurance companies (pluralistic system).** The advantage of centralised resource management compared to a system with many health insurance companies (HIC) is mainly operational savings. If the state buys healthcare from providers, it has leverage when concluding contracts and can ensure, for example, lower prices of procedures. On the other hand, more health insurance companies can offer various packages of supplementary services and benefits and have the motivation to strive for a higher quality of HC for their insured persons.

### 13.2.1 Health insurance companies in Slovakia

**In Slovakia, the system of resource management and healthcare procurement combines the drawbacks of a pluralist and unitary system.** Resources are managed by three health insurance companies, one run by state and the other two owned by private stakeholders (hereinafter referred to as “private health insurance companies/private HIC”). State health insurance company Všeobecná zdravotná poisťovňa (VŠZP) takes care of approximately 60% of insured persons, Dôvera of 30% and Union of 10%.

**In spite of the pluralist nature of the system, the HIC currently do not compete in their offers –** they offer the same product, public health insurance (PHI), usually have contracts with the same providers, do not offer information about the quality and prices of providers to the insured persons and do not differ significantly in their extra healthcare packages. In the recent years, the most intense competition among health insurance companies has been taking place particularly regarding additional benefits not related directly to quality or scope of healthcare for insured persons (more in Annexes).



**On the other hand, the system does not take advantage of its scope, i.e. operational savings usually brought in by a unitary system.** If all health insurance companies were merged into one, it would save 15 million euros annually, considering current legal thresholds of operational expenses.<sup>118</sup>

**Another inefficient aspect of the current system is found in unclear spending rules for healthcare resources.** Between 2011 and 2018, private HIC paid their stakeholders 440 million euros total, of which Dôvera paid 408 million euros and Union 32 million euros. This represents 223 euros per insured person. This money could be alternatively used for example to ensure better accessibility of healthcare.

**The largest insurance company does not use its favourable negotiating position when concluding contracts with providers.** On the contrary, the data on reimbursements in hospitals show that smaller HIC more often manage to negotiate lower prices for the same procedures (see Chapter 4.7).

<b>Measure:</b> Establish rules for the use of PHI resources which have not been used for healthcare.
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### 13.2.2 Risk equalisation among HIC

**In a pluralist system, health insurance companies get money from PHI based on the number of insured persons and their contributions. However, there is a risk that more costly insured persons will not be redistributed evenly among the HIC** – e.g. all patients prone to illness might be insured in one health insurance company and all healthy patients in another. Therefore, the costs of treatment of these patients will not correspond to the revenues, which will create losses for one HIC, while the other will have extra money left. Due to this inequality in revenues and expenses, HIC may strive to get healthy insured persons and put the costly ones at disadvantage.

**In many countries, a fair redistribution of resources is ensured by a so-called risk equalisation mechanism.** It basically identifies the risk level of the insurance portfolio of each health insurance company and subsequently transfers resources to HIC with more costly patients. When the system is set correctly, the HIC can focus on effective treatment of patients with any risk profile since no group of patients is unprofitable for them in the long term. Some type of risk equalisation mechanism is used by countries such as Belgium, Germany, the Netherlands or Slovakia.

**Slovakia uses a risk equalisation mechanism inspired by the Dutch model** and is currently able to predict “only” 24% of average expenses. This is the case of foreign models as well and it does not have to mean that the redistribution is bad from a systemic point of view. The model is still partially responsible for an imperfect redistribution of resources among health insurance companies. On the other hand, it is true that a part of the differences in losses and profits can be explained by the ability of the HIC to manage their funds efficiently. An efficiency analysis of VŠZP from 2018 identified a large room for improvement in this area (Chapter 13.2.3).

**The mechanism can be partially improved by taking into account other parameters** (“patient characteristics”) which are currently not included in the model mainly due to lack of quality data. It includes, for example, use of medical devices or inclusion in a diagnostic group.

**Another improvement can be done by an additional compensation for patients who are very costly even after the redistribution (so-called ex-post redistribution).** No model, albeit very good, cannot provide for all patients; there are some with high expenses in the long term but the model does not assign them a high redistribution factor, for example because they do not belong to any defined group of chronic diseases. One example can be a patient with a very rare disease who uses very expensive pharmaceuticals for a long time and is unprofitable for the HIC. Even just a few of such insured persons can influence the outcomes of a health

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<sup>118</sup> Calculation according to §6a 581/2004 Coll.

insurance company. The solution can thus be that all the HIC bear this risk together. Ex-post redistribution is not used anymore because of the risk that HIC would not be willing to efficiently manage costly insured persons if they were fully compensated for them (for more information about the risk, see the box in the Annexe). One option would be to establish an independent review committee for all three health insurance companies to decide whether the treatment expenses for a small number of expensive patients not taken into account by the ex-ante model are justified. Therefore, the HIC would not be unprofitable and would still have the motivation to treat the patient effectively.

The principle of risk equalisation mechanism, its current form and possible adjustments in the future are described in the Annexes.

#### Measures

- Use parameters which better explain future treatment expenses for patients in mechanisms abroad
- Evaluate the option of ex-post redistribution after evaluation of costly cases by a review committee

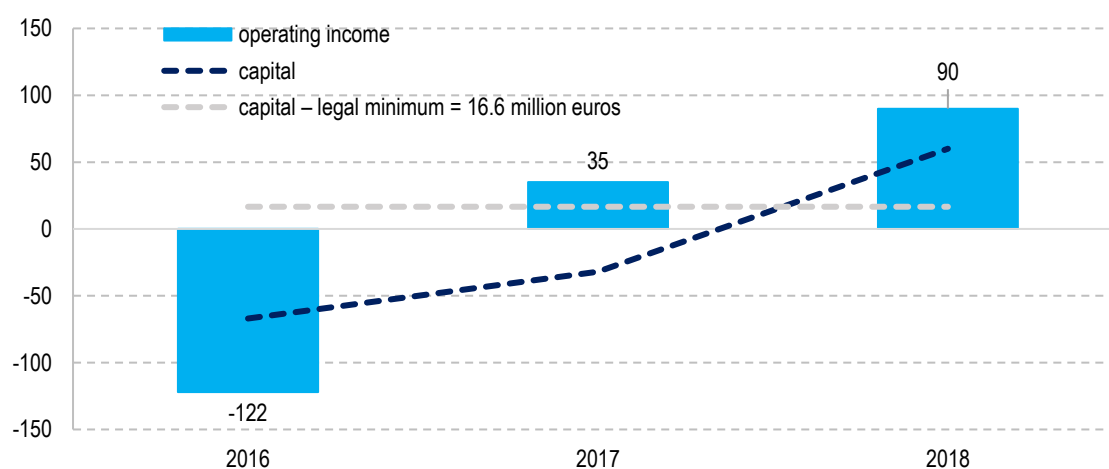
### 13.2.3 Všeobecná zdravotná poisťovňa

**Even though VŠZP spends less on operation and expenses beyond HC per insured person than the private HIC, there is still room for improvement of processes.** VŠZP has a long-standing problem with operating income which changes significantly year-on-year and with cost and revenue planning compared to private HIC (Graph 71).

**In 2016 – 2017, VŠZP underwent a forced remedial plan due to operating income of -122 million euros and decrease of capital to -67 million euros in 2016.** Health Care Surveillance Authority (HCSA) orders such remedial plans to be implemented in a health insurance company if its capital drops below 16.6 million euros (legally defined minimum value of equity capital for a health insurance company). The remedial plan obliged VŠZP to fulfil measures including central procurement of pharmaceuticals, lower expenses on pharmaceuticals, lower prices of medical devices and SMM, lower reimbursements for CT and MRI, withdrawal from contracts with inefficient healthcare providers or improvement of review activity.

**In 2018, the HCSA declared that VŠZP had fulfilled the targets of the remedial plan,** stabilised its expenses, improved the collection of insurance premium and achieved positive operating income, which fulfilled the legally determined value of equity capital. The remedial plan was thus finished but VŠZP stated its intention to keep following the measures, rules and contractual relationships.

**Graph 71: Development of the economic activity of VŠZP**

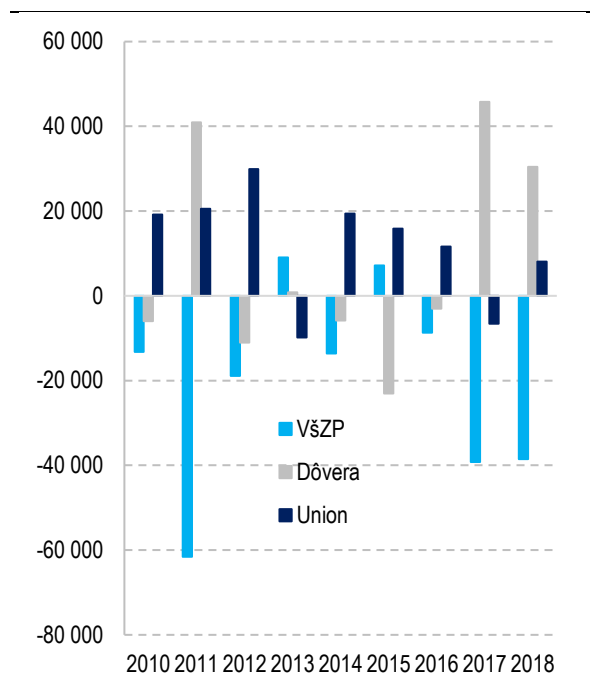


Source: annual accounts



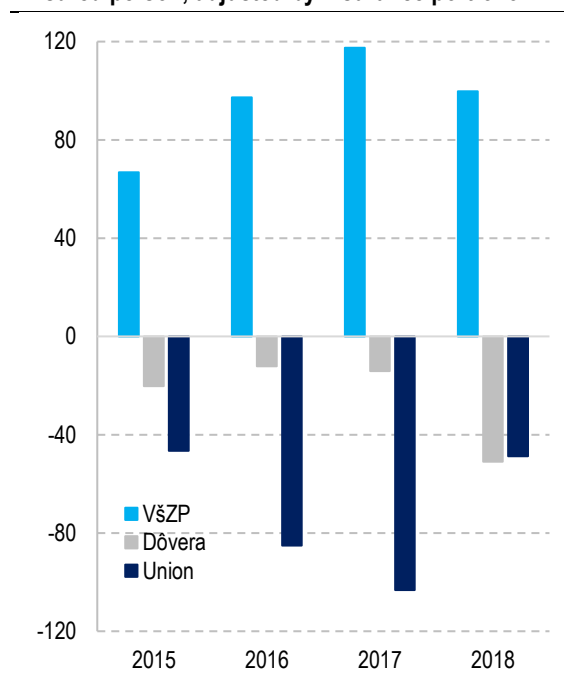
In the long term, VŠZP also spends more money per insured person than the other HIC, even after taking into account the differences in insurance portfolios (Graph 73). However, it continually loses more insured persons (Graph 72).

Graph 72: Gain/loss of insured persons



Source: HCSA

Graph 73: Change of average HC expenses per 1 insured person, adjusted by insurance portfolio



Source: HIC

In order to streamline the management of the biggest health insurance company, VŠZP has undergone an optimisation project. Measures with a potential of 150 million euros have been identified, of which measures for 35 million euros can be implemented in the first year. As in the entire healthcare spending review, the goal is to use the freed up funds in areas with the highest potential to improve healthcare outcomes. The insurance company currently spends 3 billion euros on healthcare (of which 1 billion euros on pharmaceuticals and devices, the rest is reimbursed to the providers) and 100 million euros on operation. Performance of the plan is monitored by the Implementation Unit of the Government Office of the SR.

Table 39: Cost-saving measures

in million euros, interval	In the first year	In the third year
<b>Healthcare</b>	<b>17 - 20</b>	<b>77 - 107</b>
Area 1: Optimisation of healthcare procurement	11 - 12	35 - 58
Area 2: Improving review checks of healthcare providers' expenses	6 - 8	42 - 49
<b>Operation</b>	<b>4 - 6</b>	<b>17 - 21</b>
Area 3: Increase in employee productivity (hiring freeze)	1 - 1	7 - 10
Area 4: Consolidation of branch network	1 - 2	3 - 3
Area 5: Rationalisation of other operational activities	2 - 3	7 - 8
<b>TOTAL</b>	<b>21 - 26</b>	<b>94 - 128</b>

### 13.3 Health system regulation

**Health system regulation in Slovakia has been performed by the Health Care Surveillance Authority (HCSA) since 2004.** It regulates mainly the functioning of health insurance companies and checks correct provision of healthcare. Its president and board of directors are appointed by the government upon suggestion of the Ministry of Health, supervisory board is appointed by the parliament.

**Regarding health insurance companies regulation, HCSA can order them to implement remedial plans or receivership in case of economic or other risks.<sup>119</sup>**

- **Remedial plan:**

A health insurance company must prepare a remedial plan, for example, if its ability to fulfil legal or contractual obligations is compromised, or if its capital equity drops below the legal minimum due to negative operating income. If the HCSA refuses the remedial plan suggested by the HIC, if the HIC does not fulfil the measures outlined in the remedial plan or, for example, if safe functioning of PHI is compromised, the HCSA can order receivership of the health insurance company. The activity of VŠZP was under a remedial plan in 2017.

- **Receivership:**

During receivership of an HIC, functions of all authorities in the company and senior employees directly subordinate to the board are suspended. The HIC is subject to checks in all areas of its activity and management. The purpose of receivership is mainly the adoption of a remedial regime, gradual stabilisation and restoration of solvency. If the aforementioned cannot be achieved, the HIC might go bankrupt.

#### Checking correct provision of healthcare and nursing care

If a patient thinks they were not provided healthcare correctly, they have the right to ask the provider for correction. If the patient's request is not fulfilled in a timely manner, they can address their complaint to the HCSA.

**Last year, HCSA imposed 109 fines for incorrect provision of healthcare amounting to 91,000 euros altogether.<sup>120</sup> The authority did not make any accusations regarding incorrect provision of treatment.**

**Out of 1,450 motions checked directly by the authority, 150 cases were declared justified.** In 2018, the authority dealt with 2,500 complaints, of which 73% were sent in the given year. 1,900 requests were concluded. The most frequent complaints were dissatisfaction with treatment process (55%) and healthcare-related death (25%).

**Patients must contact the court in order to get a compensation, the authority does not handle this.** The court can take into account the findings of the authority regarding the misconduct, however, it collects evidence separately. It means that it will not help patients to address the HCSA directly if they are dissatisfied.

### 13.4 Healthcare providers

**Both state and private providers can be found in the majority of systems and it cannot be said which ones function better only based on their ownership.** Research in the EU countries shows that public hospitals are equally good or better in terms of quality and efficiency than private "for-profit" hospitals (e.g. meta-analyses by Kurse et al., 2017 or Tynnkynen et al., 2018). Some studies have identified a better performance in case of for-

<sup>119</sup> According to §51 and §52 of the Law No. 581/2004 Coll.

<sup>120</sup> The data about HCSA come from activity report of the Health Care Surveillance Authority for 2018. The authority dealt with 680 motions from the previous years in 2018.

profit hospitals, however, the differences between the types of hospitals stem mainly from institutional aspects of the system (Barbetta et al., 2007). According to Kruse et al. (2017), the increasing share of private hospitals in Europe in the recent years is not related to an improvement in their performance. Private hospitals have a higher tendency to react to financial incentives. Therefore, the authors of the meta-analysis recommend the countries to be careful when implementing financial tools and measures and, in general, when privatising hospitals.

**Proper management is more important than the ownership of a hospital.** Hospital manager should be selected via transparent selection procedure and their subsequent activities should be subject to thorough checks. A hospital should be managed strategically in terms of expenses and outcomes. The management of Slovak state hospitals can be improved by centralised network management, e.g. via holding structure. The management of teaching and university hospitals is currently supervised by the URPO<sup>121</sup>, but it does not have a managing function nor the competence to impose sanctions. Hospital management has not improved significantly since the establishment of the URPO.

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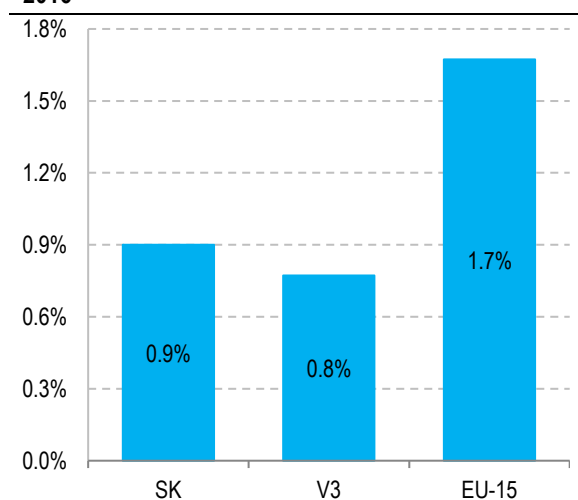
<sup>121</sup> See Chapter 4.6.

## 14 Long-term care

### 14.1 Expenses on long-term care

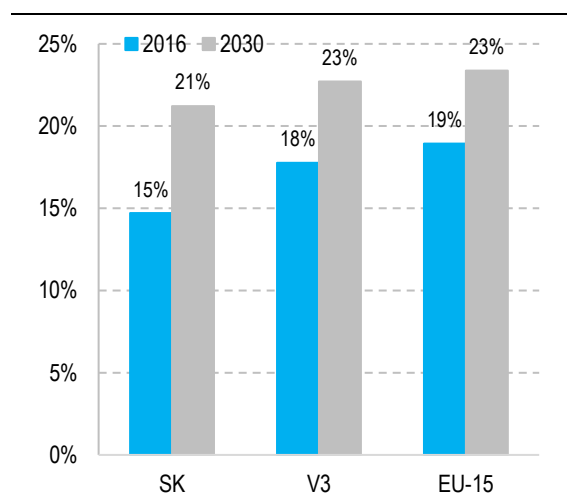
Slovakia dedicates 0.9% of GDP to long-term care, which is less than the average in developed European countries, but more than the average in V3 countries. After adjusting the expenditure by differences in age structure, Slovakia dedicates to long-term care 0.4% of GDP less than EU15 countries. In 2017, it represented 340 million euros. According to population ageing prognosis, it will be necessary to increase the expenditure by 818 million euros in 2030 (Table 40, Graph 76, Graph 77). Long-term care encompasses healthcare and social care for the chronically ill and the elderly (Box 12).

**Graph 74: Expenses on long-term care, % of GDP, 2016**



Source: EC, AWG

**Graph 75: Proportion of citizens aged 65+, 2016**



Source: Eurostat

According to the predictions made by the European Commission, the proportion of citizens aged over 65 will increase at the third highest rate in Slovakia out of all EU countries in the next decades and it will achieve 21% in 2030 (Graph 75). The proportion of citizens aged over 80 will increase from current 3.2% to 9% in 2050 and to 14.3% in 2070, making it the second highest proportion in the EU.

**Table 40: Comparison of expenses on long-term care after adjustment by age structure**

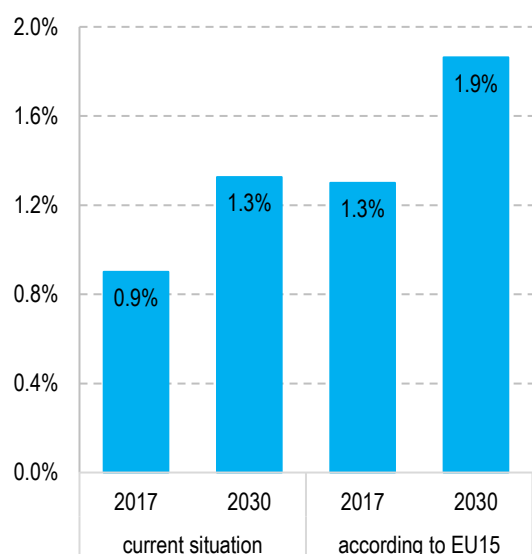
	EU15	V3	SK 2017	SK 2030
Expenses on long-term care, % of GDP	1.7%	0.8%	0.9%	-
Proportion of citizens aged 65+	18.9%	17.8%	14.7%	21.2%
Expenses on long-term care in EU15 countries with Slovak age structure, % of GDP	-	-	1.3%	1.9%
Difference in SK and EU15 expenses after adjusting by age, % of GDP	-	-	0.4%	1%
<b>Necessary increase in million euros, 2017</b>	-	-	<b>339</b>	<b>818</b>

Source: EC, Eurostat

With such a demographic development, the expenses on long-term care will keep increasing. They should achieve 1.8% of GDP in 2050, which is twice the current value. This prediction also assumes that the current model of long-term care will be maintained. As is described later on, it does not satisfy the current needs of the citizens. If the long-term care system in Slovakia adapts to the needs of the population, the increase in expenses will be even more significant. This is why, in compliance with the EC recommendations, it is important to create a sustainable funding system focused on strengthening intersectoral cooperation regarding social care and healthcare. One example can be found in the Netherlands. Due to increasing expenditure on long-term care

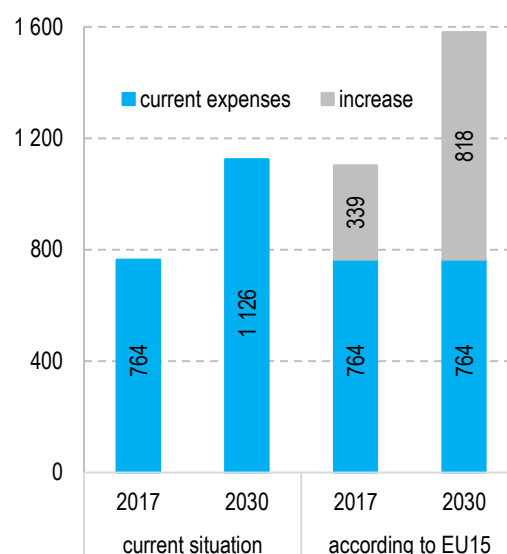
system, important funding reforms were implemented in 2015, criteria for inpatient care were made stricter and many competences were transferred to regional administration authorities.

**Graph 76: Necessary increase in expenses on long-term care, % of GDP**



Source: EC, OECD

**Graph 77: Necessary increase in expenses on long-term care, in million euros**



Source: EC, OECD

### Box 12: Definition of long-term care

**There is currently no unified common definition of long-term care in Slovakia nor abroad.** For the sake of comparison with foreign countries, this review uses the definition formulated by the European Commission which characterises long-term care as “organisation and delivery of a broad range of services and assistance to people who are limited in their ability to function independently on a daily basis over an extended period of time, due to mental and/or physical disability.” People who require long-term care are termed “long-term care dependent” by the EC.<sup>122</sup> The EC considers dependence to be long-term if the need for help or assistance lasts longer than 6 months.

**LTC can be formal or informal based on the type of provider.** Formal LTC is provided by qualified staff in social care and healthcare facilities or at home. Informal LTC is provided by unqualified caregivers at home, usually free of charge (compensated by carer’s allowance in some cases). The caregivers are usually close relatives, friends or other people from the social circle of the dependent person.

**LTC in Slovakia includes social care and healthcare, which is why it belongs under the authority of the Ministry of Labour, Social Affairs and Family of the SR (MoLSAF) and the MoH SR.** Several executive competences are transferred to self-governing regions and municipalities.

<sup>122</sup> In Slovakia, the equivalent of “dependence” is the so-called OPIO – reliance on care by another person, laid out in the Law No. 448/2008 on Social Services. This concerns people who, due to a deficiency or loss of physical and/or mental autonomy, need considerable help or assistance in daily activities. These activities include activities of daily living (ADL), i.e. personal hygiene, getting dressed, eating, moving around, administration of pharmaceuticals etc. Another category defined in the law are instrumental activities of daily living (IADL), i.e. shopping, cooking, food delivery, washing, ironing. If a person is dependent on help only in terms of instrumental activities of daily living, they are not long-term care dependent according to the EC definition. A person is assigned to one of 6 categories by a degree of reliance on care based on the complexity of the case. The degree of reliance on care helps assess the person’s entitlement to assignment to a long-term care facility and entitlement to nursing care.

### Types of long-term care (LTC) in Slovakia

		SOCIAL LTC	HEALTH LTC
FORMAL LTC	Residential services	Social services centre Nursing home for the elderly Specialised facility Nursing home	Hospice Sanatorium DOS (Type of nursing home) <b>Hospital – wards:</b> - long-stay ward - follow-up care ward - geriatrics - palliative care
	Outpatient services/community care	Day (social) care centre Rehabilitation centre Nursing service	Mobile hospice ADOS (Home care and nursing agency) Day (health) care centre Home care <b>Doctor's offices:</b> - geriatrics - palliative
INFORMAL LTC		Carer's allowance Compensation for care of a sick relative	

## 14.2 Organisation of long-term care

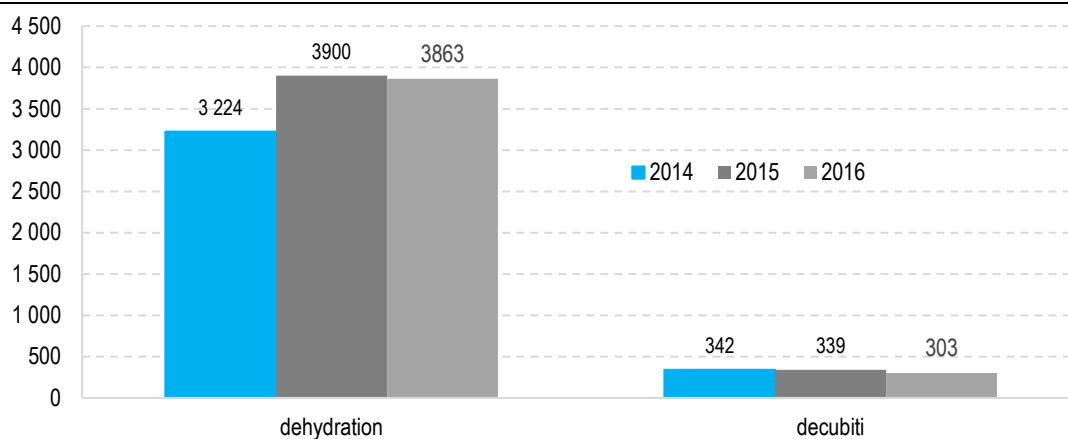
The currently provided long-term care services for the elderly and the chronically ill in Slovakia do not correspond to the current needs of the citizens. The drawbacks and needs of systems in EU countries were identified by the European Commission in its 2018 report (EC, 2018). It states that Central and Eastern European countries have poor coordination among departments, understaffed home and community care and a large part of the services are provided by close relatives at home without an adequate state support.

The drawbacks are manifested in all the aforementioned areas in Slovakia:

1. poor accessibility of **follow-up care and nursing care within inpatient care;**
2. small **capacities of social care facilities intended for long-term care;**
3. poor accessibility of **formal home and community care;**
4. insufficient **integration of healthcare and social care services** into social care and healthcare facilities;
5. insufficient **support of informal caregivers at home.**

Due to system flaws, there is a high number of readmissions to acute wards, admissions due to decubiti and dehydration of elderly patients (Graph 78) and, overall, lower quality of life of the elderly and the chronically ill, as well as a burden for the relatives who take care of them. **Changes in the system are necessary in order to prevent the situation from worsening due to rapid population ageing.**

**Graph 78: Number of hospital admissions for a diagnosis which should be managed by home care, population 65+**



Source: MoH SR

### 14.2.1 Follow-up inpatient care

**Follow-up inpatient care represents an “intermediate level” between hospital admission to an acute ward and discharge to outpatient care. At the moment, the capacities of follow-up inpatient care in Slovakia are insufficient**, which, in a combination with other aforementioned flaws of long-term care, causes redundant readmissions.

**In 2019, the government approved an amendment of the Law on Healthcare<sup>123</sup> which is supposed to increase the capacities of follow-up inpatient care.<sup>124</sup> The amendment introduces the terms *Follow-up inpatient health care* and *Follow-up inpatient nursing care*. Follow-up inpatient health care is provided mainly in hospitals – in long-stay wards, follow-up care wards, palliative medicine, physiatry, balneology and rehabilitation and psychiatry wards but also in hospices and sanatoriums. According to the definition, the care must be provided until a patient is able to be discharged to outpatient care, but only up to 3 months after the admission to inpatient care.**

**According to the MoH SR, the current number of hospital beds in follow-up inpatient health care (3,200) will have to be doubled by 2030.** The amendment also conditions the increase of the number of beds in long-stay wards by lowering the standard requirements for numbers of acute beds (policy measure stemming from inpatient care reform, so-called stratification) which would free up personnel, spatial and financial resources.

**Besides hospital wards, follow-up healthcare is also provided in hospices<sup>125</sup>; however, their capacity requirements have not been objectively assessed yet.** The standard requirements for hospices is currently defined as one facility per self-governing region, without a specific number of beds. Based on the amendment, this should increase to at least 2 hospices per region with a total number of beds amounting to 290. The main problem of hospices and mobile hospices is funding – due to insufficient payments from HIC, the providers must set higher prices of services, which decreases their accessibility to some groups of patients.

<sup>123</sup> Hereinafter referred to as “the amendment”.

<sup>124</sup> Available at <https://rokovania.gov.sk/RVL/Material/24090/1>.

<sup>125</sup> These forms of care are provided to patients with a terminal disease whose life expectancy is shorter than 6 months.

## Residential social care facilities, home and community care

**Residential social care facilities do not have enough places; the number of people on waiting lists in nursing homes for the elderly and in specialised facilities surpasses the number of available places by 30%, in social services centres by 13%.** The largest number of places in residential social care facilities is available in facilities for the elderly, intended for year-round residence of patients with higher degrees of reliance on care. There are 18,500 beds available in 387 such facilities. The number of people on waiting lists in 2018 was 5,700. However, these facilities take care of people with higher degrees of reliance on care which makes home care very difficult. As much as 20% of respondents in a survey<sup>126</sup> by the Association for the Protection of Patients' Rights in Slovakia (AOPP) waited for their dependent person to be placed in a social care facility for more than 1 year. Only 40% of the respondents were able to place the dependent person in a facility within 2 months. **It can help the patients on waiting lists to be provided other forms of the services, particularly home and community care.**

**The tendency in long-term care abroad is to broaden home and community care (deinstitutionalisation). These services are understaffed in Slovakia.** These forms of care allow chronically ill patients and the elderly to live in their natural social environment (family, friends) and take upon themselves a part of the tasks of the informal caregivers, which alleviates economic and mental burden of the care. The amendment of the Law on Healthcare reflects the necessary increase of capacities of home care and nursing agencies (ADOS) and mobile hospices. It also increases the staffing norms of the number of nurses and amounts reimbursed. The EC states that the number of day social care centres, day health care centres and coordinated group or individual assisted living facilities can be increased as well.

**Giving priority to home and community care does not mean that the capacities of residential facilities should decrease considerably.** There is no universal LTC model and the process of deinstitutionalisation should reflect the demographic development of the population and related determinants. It is important that home and community care are not regarded simply as a “cheap alternative” to residential facilities, but to base the LTC model in the country on objective needs of the population.

## Informal caregivers

**The shortage of formal care capacities is replaced by informal caregivers, most often relatives and friends. This form of care is not adequately supported and funded in Slovakia.** At the end of the last year, 54,700 people received the financial compensation for a caregiver of a dependent person amounting on average to 215 euros monthly per one dependent person. This type of contribution can be received only by caregivers of people with severe disability. However, also people without an approved status of severely disabled person often require complex care. As much as 71% of respondents of the AOPP survey provided long-term care to their relative on their own but only 20% of them were entitled to a carer's allowance. **This system with insufficient formal services has a negative economic impact on individuals, families and the society because many people cannot work on the labour market but have to provide unpaid care.**

**Experts estimate that the real number of people in need of long-term care in Slovakia is much higher than stated in social and health statistics.** Approximately 120,000 people received long-term help in 2017 via various forms of social care; 61,000 people were using long-term health care services. This represents 2.4% of the

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<sup>126</sup> The survey was conducted as a part of the project “Long-term care strategies.” Representatives of the Ministry of Health of the SR, Ministry of Labour, Social Affairs and Family of the SR and the Association for the Protection of Patients' Rights in Slovakia have cooperated on the project under the auspices of the Government Office Plenipotentiary for Civil Society Development. <https://aopp.sk/clanok/priplatky-nespokojnost-s-personalom-aj-nedostatok-kapacit-v-zariadeniach-aj-odhalil-prieskum-o-dlhodobej-starostlivosti>



population above the age of six. An expert forum<sup>127</sup> identified the number of people dependent on assistance as 5.7% of the population<sup>128</sup> already in 2014. Based on the demographic development, it can be estimated that the proportion has since increased.

**Therefore, the real number of informal caregivers in Slovakia is higher than what the statistics show.** If an informal caregiver is not entitled to receive a carer's allowance and does not use any form of outpatient long-term care, the burden of care is great. This problem can be partially solved by the newly established "long-term compensation for care of a sick relative" which can be received by a relative of a person in need of care upon doctor's indication; however, it is limited to 3 months. Given that the waiting periods for nursing homes for the elderly and other residential and outpatient social care facilities are usually longer, this form of support is insufficient.

### Intersectoral coordination

**Poor coordination between the Ministries of Health and of Social Affairs causes a situation where neither of the services – healthcare and social care – is sufficiently integrated in joint facilities of the sectors. This results in a lower quality of healthcare in social care facilities and, vice versa, poor social services in healthcare facilities.** The fragmentation among sectors and regions has been identified by a working group of the EC as one of the obstacles of high-quality and accessible long-term care. It is true that quality assessments of services in social care facilities (managed by the MoLSAF) are legally obligatory, but it only concerns social services. In case of healthcare and nursing care, the assessment can only evaluate whether they are provided to the client or not. Quality assessment for these services should be conducted by HCSA, however, the scope of the assessment is not further determined by the law.

**Lack of coordination between social and healthcare services is also manifested in the difficulties with transferring a patient from inpatient care to a social service facility or home care.** Placing a patient in a social care facility requires an evaluation of their degree of reliance on care, which is a very lengthy process. Given that hospitals do not have enough capacities for chronically ill patients and the capacities of hospices and DOS are also insufficient, the patient often has to be discharged to home care before the evaluation is ready in order for them to be placed in a social care facility.

#### Measures

- Increase capacities and expenses on follow-up inpatient healthcare, hospices, mobile hospices and nursing care agencies according to the amendment of the Law on Healthcare by 27 million euros per year and by 15 million euros in the first year.
- Increase funding to EU15 level by 340 million euros per year in a 10-year period.
- Significantly strengthen home nursing care – ADOS, mobile hospices
- Significantly strengthen community care – day health care centres, day social care centres, assisted living
- Broaden the scope of follow-up care
- Provide sufficient financial compensation to informal caregivers and support their engagement in the labour market (e.g. by flexible employment contracts) (EC, 2018).

<sup>127</sup> Repková, K. Možnosť zavedenia poistenia v odkázanosti na pomoc inej osoby – analytické východiská. (March 13, 2019)

<sup>128</sup> This sentence differs from the Slovak original due to a mistake in the original version.

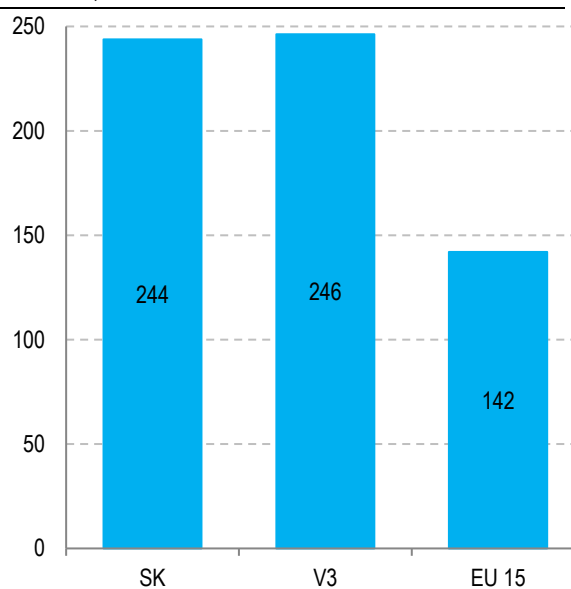
## 15 Disease prevention and health promotion

### 15.1 Outcomes in prevention and health promotion

Diseases preventable by better public health and prevention programmes have been responsible for slightly fewer deaths in Slovakia than the average in V3 countries, but considerably more than in EU15 countries (Graph 79). Number of such deaths is measured by a preventable mortality indicator published by Eurostat (Eurostat, 2019).

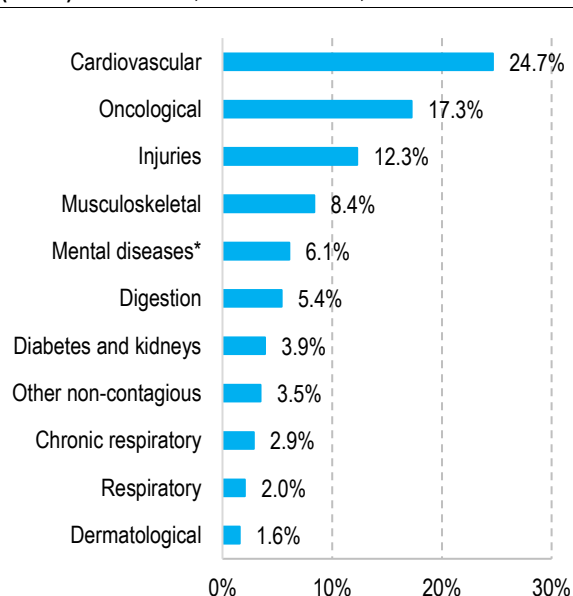
The main preventable causes of death include cardiovascular, oncological and pulmonary diseases; these are also the diseases which lead to the majority of treatable causes of death (treatable mortality). These diseases, particularly if chronic, also represent the greatest disease burden measured in DALY indicator (disability-adjusted life years). DALY represents the number of years with the disability and the number of years lost due to premature death (Schema). A considerable portion of preventable causes of death includes car accidents and other injuries, alcohol abuse-related diseases and self-harm including suicides.

**Graph 79: Preventable mortality, per 100,000 citizens, 2016**



Source: Eurostat

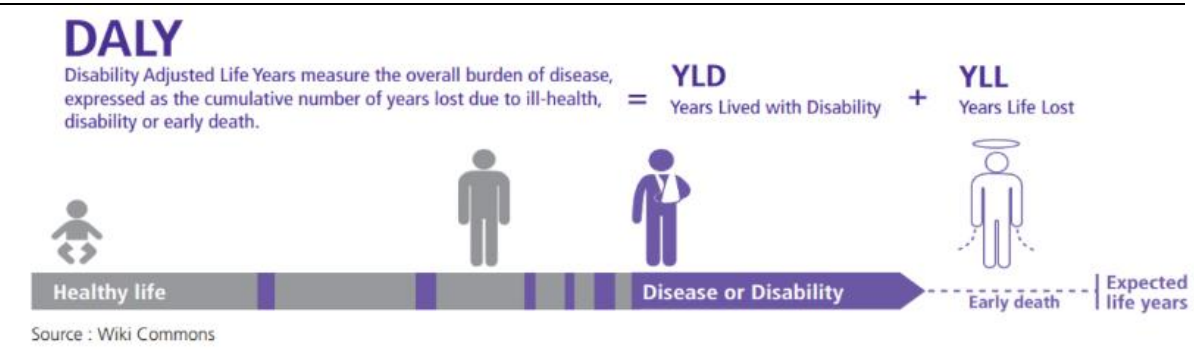
**Graph 80: Disease burden including premature death (DALY) in Slovakia, % of the whole, 2017**



\*Including injuries due to self-harm, alcohol abuse and mind-altering drugs abuse

Source: GBDCN

**Schema 1: DALY indicator**



Source: National Collaborating Centre for Infectious Diseases

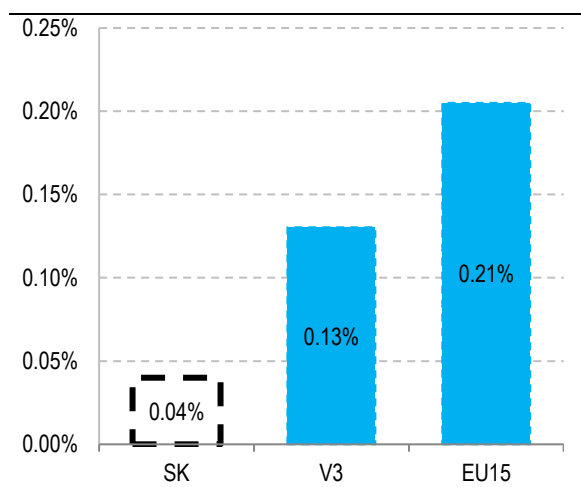
**Prevention includes primary prevention** (preventive healthcare, vaccination) **and secondary prevention** (screenings, disease monitoring). On the other hand, **health promotion** represents policy measures focused on lifestyle improvement (drinking less alcohol, less smoking, more physical activity, improving unhealthy diet) and addressing risk factors in the environment (environmental and socio-economic factors, family environment), see Annexes.

**15.2 Expenses on prevention and health promotion**

**On average, V3 countries allocate 2.5 % to prevention out of public healthcare expenditure, EU15 countries allocate 2.8%. No comparable data is available for Slovakia** (see box in the Annexes). According to Gmeinder et al. (2017), it seems that countries invest very little in prevention given that many policy measures prove to be cost-effective; however, the data can be undervalued in the other countries as well due to problematic reporting. The authors add that it is not easy to determine a correct prevention-to-treatment expenses ratio because many effective prevention programmes are very cheap (e.g. vaccination) and a lot of suitable programmes are not managed by the health sector.

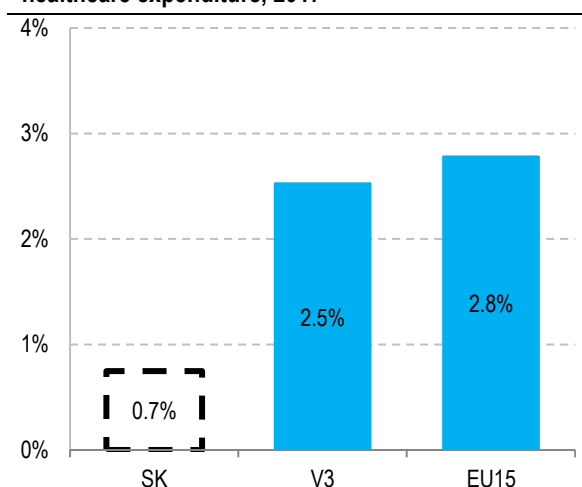
**Due to poor health outcomes in Slovakia, we can assume that there is a large room for improvement in investments in prevention and health promotion, mainly of non-contagious diseases.**

**Graph 81: Expenses on prevention\*, % of GDP, 2017**



\*data reported for Slovakia is not comparable to benchmark  
Source: OECD

**Graph 82: Expenses on prevention\*, % of overall healthcare expenditure, 2017**



\*data reported for Slovakia is not comparable to benchmark  
Source: OECD

### 15.3 Effective and cost-effective prevention and health promotion programmes

**Investments in effective prevention and health promotion programmes are at least as cost-effective as the treatment of subsequent diseases** (WHO, 2015b). The state can encourage healthier habits of the population by imposing taxes, regulations, education or behavioural modelling. Preventive measures have managed to significantly improve vaccination rate and early disease detection all over the world in the last decades. They have also contributed to a lower number of accidents and injuries and lower consumption of alcohol and cigarettes.

It is important but also complicated to identify programmes which really work. Very often, only a combination of several policy measures is effective. OECD also warns that lower healthcare expenditure should not be the main motivation for investments in prevention and health promotion. **The most important benefits of prevention are not lower expenses on treatment; the return on investment stems mainly from higher productivity, lower burden on the social system and lower disparity in health and welfare of citizens** (Devaux & Sassi, 2015).

#### Prevention

**Childhood vaccination rate for measles in Slovakia is still over the critical 95% threshold, which is similar to the average of V3 countries and now also EU15 countries (Graph 83).** In the recent years, some parents have become more and more reluctant to vaccinate their children out of unjustified fear of side effects, often as a result of disinformation. In reality, measles are a severe viral disease which can develop into pneumonia, encephalitis, diarrhoea and even cause blindness. Measles vaccination is very effective. To protect people who cannot be vaccinated (e.g. due to a contraindication or low immunity), it is necessary to keep the vaccination rate over 95%. **There was a significant drop in vaccination rate in Slovakia between 2011 and 2015, but it has increased slightly since 2016. In 2019, the MoH issued a ban on presence of unvaccinated children in kindergartens<sup>129</sup>.**

**The proportion of older population vaccinated against the flu shows that the situation in Slovakia is much worse than in the other compared countries (Graph 84).** The indicator takes into account older population who is especially prone to complications during a flu infection.

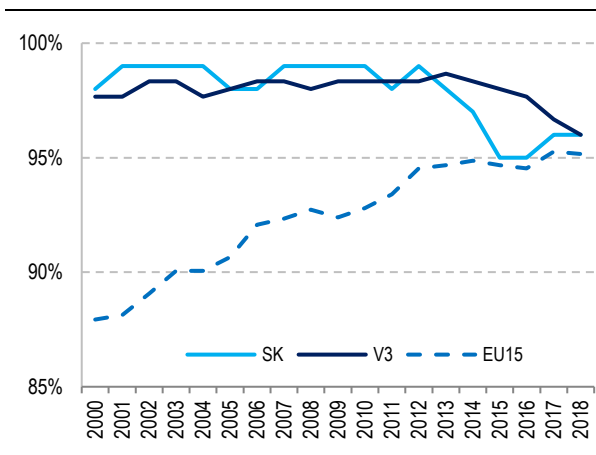
In order to improve vaccination rates, the Council of the European Union<sup>130</sup> recommends:

- implementation of national vaccination programmes and vaccination rate monitoring
- coordination of member states' vaccination programmes
- better accessibility of vaccines
- vaccination when a child enters school or an adult starts a new job
- vaccinating closer to communities, especially in case of vulnerable groups and minorities, for example in pharmacies, schools, workplaces
- better awareness of the need for and effects of vaccination, building trust in healthcare system and fight against disinformation.

<sup>129</sup> <https://www.health.gov.sk/Clanok?povinne-ockovanie-ochrana>

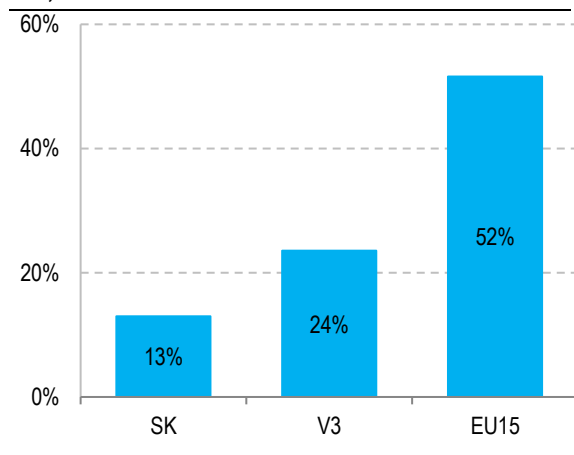
<sup>130</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0244&from=EN>

**Graph 83: Measles vaccination rate**



Source: OECD

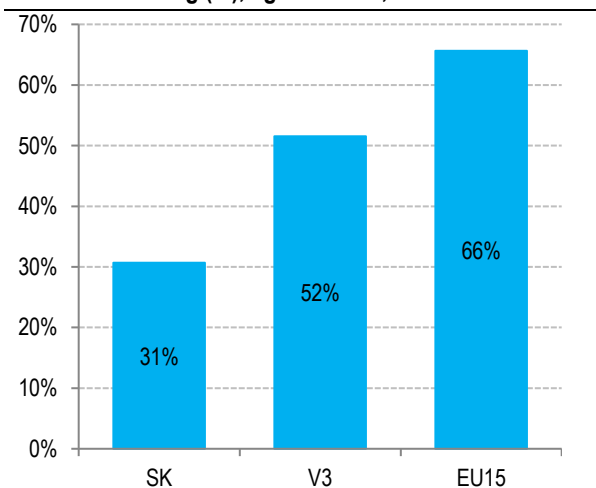
**Graph 84: Flu vaccination rate, % of population over 65, 2017**



Source: OECD

Screening programmes are intended to use targeted measures to get more people to come to screenings than would come on their own initiative. Slovakia lags behind all reference groups in terms of screening rates for breast cancer (Graph 85) and has higher mortality of breast cancer (Graph 86).

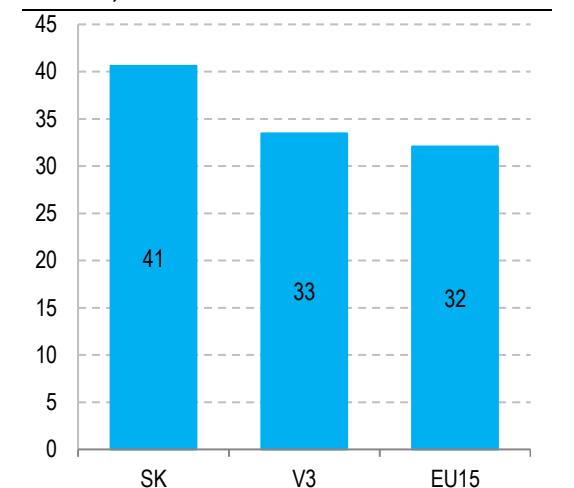
**Graph 85: Proportion of women who underwent breast cancer screening (%), aged 50 – 79, 2017\***



\*or earlier

Source: OECD

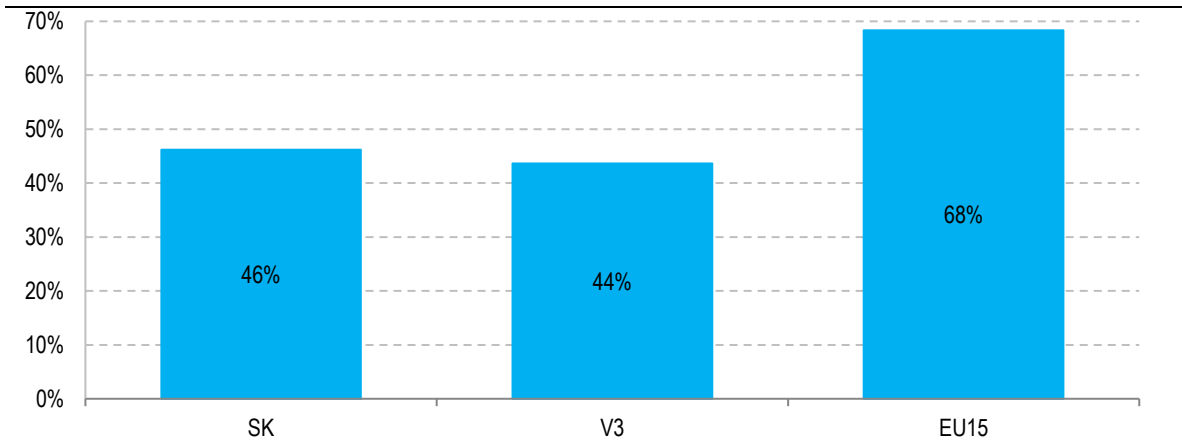
**Graph 86: Mortality of breast cancer, per 100,000 women, 2015**



Source: OECD

Slovakia fares slightly better than the V3 average in terms of cervical cancer screenings performed by a gynaecologist but considerably worse than EU15 countries (Graph 87).

**Graph 87: Proportion of women (%) who underwent a routine check-up at their gynaecologist (cervix), aged over 19**



Source: OECD

**The MoH introduced new screening programmes for oncological diseases in 2019**, mainly for cervical cancer, breast cancer, colorectal cancer and mouth cancer. The implementation of National Oncology Programme should put in practice preventive programmes and extend them to selected groups of population according to international recommendations.<sup>131</sup>

**An extended colorectal cancer screening for patients over 50 once in two years should be performed on further 160,000 people from the target group compared to the current situation.** The 2019 budget allocated 5 million euros to this policy measure; the investment should return manifold in the form of a cheaper treatment in earlier stages of the disease. Almost 25% of the invited people came to the screening in the first 7 months. If the total number of patients who undergo the examination increased and stabilised at 50% of all invited, the annual added value for the system would achieve 1.6 million euros and the number of preventable deaths would decrease from 37 to 30 deaths per 100,000 citizens from 2020.

**Breast cancer screenings in the Czech Republic, implemented in 2000, helped considerably diminish the mortality of breast cancer from 43 to 29 deaths per 100,000 women.** However, screening procedures have been re-evaluated in the recent years due to frequent cases of misdiagnosing cancer in a healthy patient (false positives). WHO currently recommends the diagnostics only for women who fulfil certain criteria (WHO, 2014). The MoH SR has launched across-the-board breast cancer screening in the summer of 2019. VŠZP should invite 2,100 women for examination in September, Dôvera should invite 1,500 women and Union 550 and the screening should take place at 15 certified facilities. The goal of the MoH SR is to fulfil EU recommendation (70 – 75% of women undergoing the screening and decrease in the number of deaths by 30 – 35%).

## Health promotion

Effective health promotion programmes are focused on decreasing risk factors which currently contribute to the development of chronic non-contagious diseases, e.g. cardiovascular diseases. Main risk factors are smoking, alcohol abuse, unhealthy diet and too little physical activity.

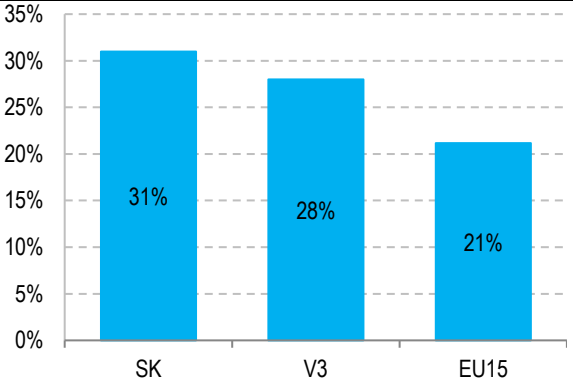
**Smoking is the most prominent risk factor endangering the health of EU citizens and the main cause of the most preventable cause of death – trachea, bronchi and lung cancer (OECD, 2018). More people smoke in Slovakia than in EU15 countries, also more adolescents than in the neighbouring countries.**

<sup>131</sup> Population screening is not a recommended option for other types of oncological diseases, but in spite of this, early diagnose of cancer remains the most suitable strategy to decrease the number of deaths.

Approximately half of smokers die prematurely, on average 14 years sooner. It is also the main risk factor of development of cardiovascular diseases and cancer – two main treatable causes of death.

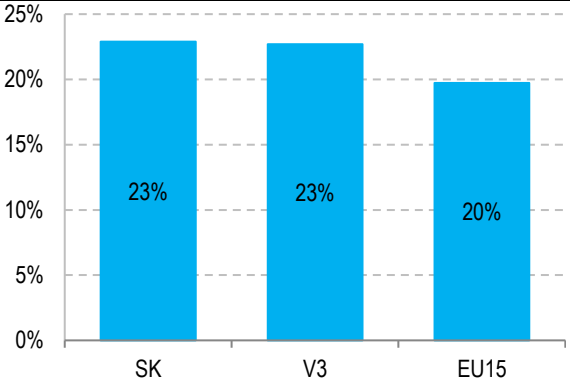
**Countries with stricter regulations manage to diminish the rate of smoking. The most effective policy measure is higher taxes on cigarettes**, best in combination with smoking ban in public places and in buildings. Newer policy measures include regulation of electronic cigarettes or smoking ban in cars in the presence of children (OECD, 2018).

**Graph 88: Smoking\* in 15 – 16 year olds, 2015**



\*in the last 30 days Source: OECD (2018)

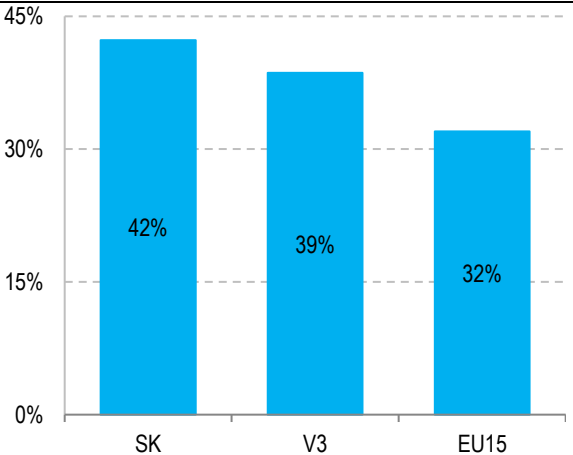
**Graph 89: Daily smoking in adults, 2016**



Source: OECD

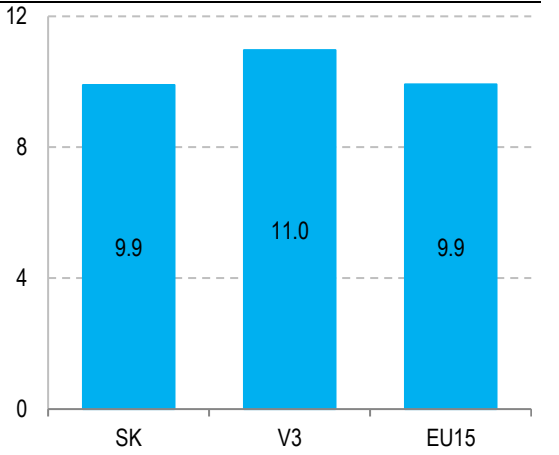
**Diseases related to alcohol consumption<sup>132</sup> are the third most common preventable cause of death. In Slovakia, as much as 42% of adolescents engage in heavy episodic drinking, which is more than in V3 and EU15 countries (Graph 90). The amount of alcohol consumed by adults in Slovakia is similar to EU15 countries (Graph 91).** Heavy episodic drinking and also long-term mild drinking contributes to cardiovascular diseases, liver cirrhosis, some types of cancer, but also to accidents, injuries, violence, killings and suicides. **Like cigarettes, the main policy measure is strict regulation** via taxation. In Scotland, price regulation per gram of alcohol was introduced in order to reduce mainly episodic drinking of cheap alcohol by adolescents and restrict their access to alcohol (OECD, 2018).

**Graph 90: Heavy episodic drinking\* in 15 – 16 year olds, 2015**



\*in the last 30 days Source: OECD (2018)

**Graph 91: Alcohol consumption in adults, litres, 2016**

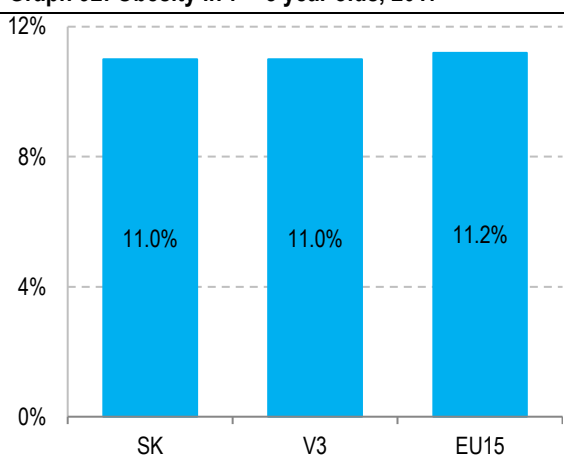


Source: OECD

<sup>132</sup> For example mental diseases, nervous system degeneration, alcoholic cardiomyopathy, gastritis, hepatitis, liver cirrhosis.

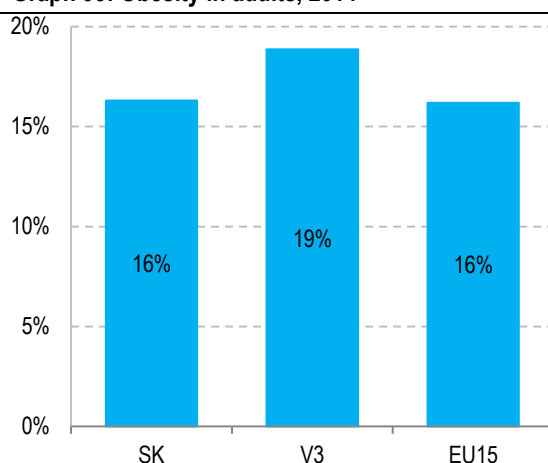
**Adult obesity in Slovakia is less frequent than in the neighbouring countries and comparable to EU15, childhood obesity is comparable in all compared groups** (Graphs 92 and 93). In the majority of countries with available data, obesity grows more frequent. Obesity increases the risk of hypertension, high cholesterol, diabetes, cardiovascular diseases and some types of cancer. **Within the fight against obesity, many EU countries have introduced a tax on food and drinks with high fat, sugar and salt content.** The EU promotes a multilevel and multisectoral approach to obesity prevention during the course of lifetime. Suitable measures apply to people from newborns, related to breastfeeding promotion, better regulation of baby food and higher fruit and vegetable intake. Frequent policy measures include awareness campaigns about ingredients, regulation of food marketing, better package labelling, stricter food standards in schools. Other measures are promotion of physical activity, cycling or workplace wellness programmes (OECD, 2018).

**Graph 92: Obesity in 7 – 8 year olds, 2017**



Source: WHO

**Graph 93: Obesity in adults, 2014**



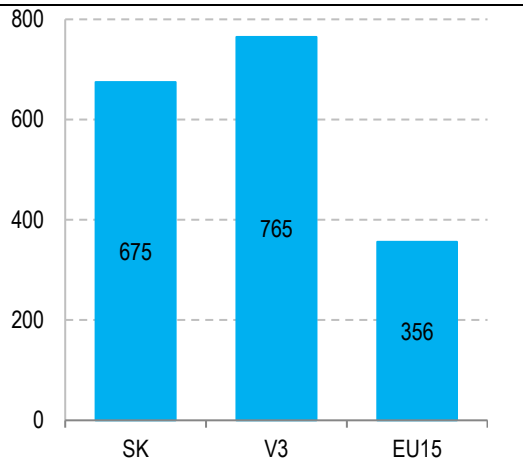
Source: Eurostat

**Mortality due to air pollution by PM2.5 particles and ozone is slightly lower in Slovakia than in V3 countries, but almost twice as high as in EU15 countries** (Graph 94). Miniature PM2.5 solid particles damage health by penetrating deep into the respiratory system. The majority of them is produced by combustion in exhaust fumes, factories, power plants and households. Combustion also increases ozone concentration in the atmosphere (OECD, 2018).

**Unhealthy lifestyle is most often found in people with lower education and socio-economic status. Out of the EU, Slovakia had the third largest difference in obesity between people with the highest and lowest achieved education.** In developed countries, people from lower social classes have a 46% higher chance of dying sooner than people from higher classes (Brogan, 2017), mainly due to more frequent cases of diabetes and smoking. Besides reducing unhealthy lifestyle choices, policies should also focus on reducing poverty (OECD, 2018).

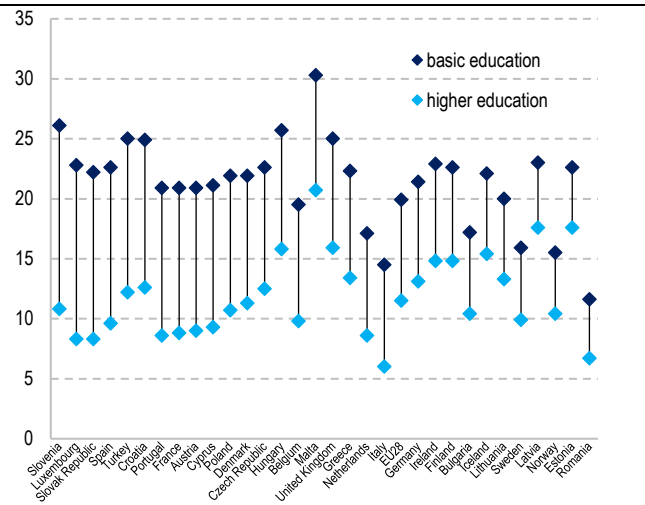


**Graph 94: Mortality due to exposure to PM2.5 particles and ozone, 2016**



Source: GBDCN

**Graph 95: Difference in obesity by education, 2014**



Source: OECD (2018)

**Several national programmes related to disease prevention exist in Slovakia, however, the MoH SR thinks that their coordination and monitoring is insufficient.** Some examples of the programmes are National Obesity Prevention Programme, National Cardiovascular Diseases Prevention Programme, National HIV/AIDS Prevention Programme or National Mental Health Prevention Programme. In Agenda 2030 based on the UN international programme “Sustainable Development Goals”<sup>133</sup>, one of the priorities is Good Health.

**The programmes reunite stakeholders from several sectors (e.g. health, social affairs, education, environment), but the funding from individual sectors is insufficient according to the MoH.** Coordination is poor not only across sectors, but also vertically (e.g. in the hierarchy state – self-governing regions – municipalities – schools).

**According to the MoH, one of the reasons of insufficient funding of healthcare prevention is a delayed return on investment,** for example via lower treatment expenses of healthier population. **Another reason is that the return on investment can manifest in another sector than the one which invested the money in prevention** – for example, an investment in healthcare will ease the burden of unemployment benefits and increase employee productivity.

**Measure:** Invest in effective preventive measures and health promotion.

<sup>133</sup> <https://www.vicpremier.gov.sk/sekcie/investicie/agenda-2030/index.html>

## 16 Mental health

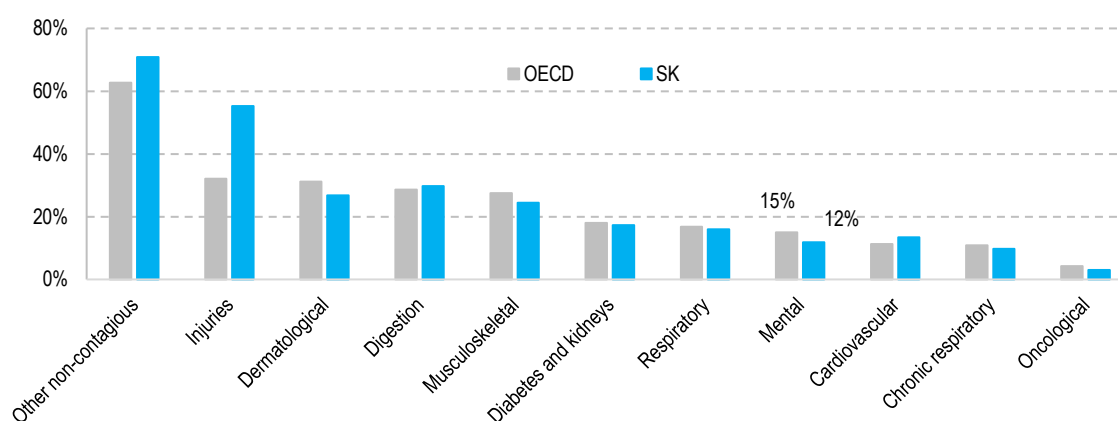
**Mental health issues pose a serious problem in OECD countries. However, they do not get enough attention in Slovakia.** A deeper investigation of the problem and possible measures will be addressed in a separate study by the VfM Division, the following chapter offers a summary.

### 16.1 Mental illness burden

**In 2017, one in eight Slovak citizens suffered from one or several mental issues<sup>134</sup>, mainly anxiety disorders** (Graph 96). In OECD countries, one in six people experiences a mental illness episode at least once in a lifetime. According to research in the USA, a person has a 50% chance of developing a mental illness at least once in a lifetime, while the percentage for cancer or diabetes is 40% (Kessler et al., 2005; ACS, 2018; CDC, 2014). There is also the unpleasant possibility that mental health will be the main cause of disability in rich countries by 2030 (Roberts & Grimes, 2011).

**Mental disorders pose a greater burden on people's health than many other diseases which currently have a higher priority in health policies.** The impact of mental disorders compared to other diseases is best shown by the DALY indicator (disability-adjusted life years) which measures the number of years spent with the disorder and the number of years lost due to premature death (more about the indicator in Chapter 15.1).

**Graph 96: Prevalence of diseases in population, 2017\***



\*Not including dementia. The categorisation of dementia varies in different classifications, either among neurological diseases (GBDCN) or psychiatric diseases (ICD-10).

Source: GBDCN

**In Slovakia, mental disorders pose the third greatest burden on people<sup>135</sup> after musculoskeletal diseases and injuries and much greater than cardiovascular or oncological diseases (Graph 97).** Mental disorders are also the third most frequent cause of entitlement to disability pension (Social Insurance Agency). **Deaths caused directly by a mental disorder include mainly suicides** which are a cause of death probably fully avoidable by appropriate prevention.<sup>136</sup> As much as 98% of people manifest signs of mental illness before committing suicide. Suicide is the second most frequent cause of death of adolescents, right after car accidents (OECD, 2018).

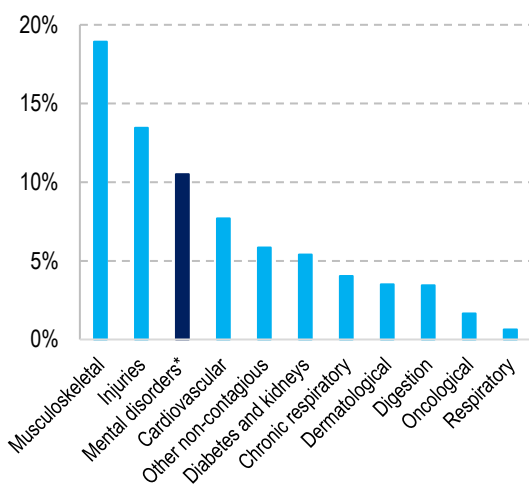
<sup>134</sup> Mental disorders are a broad spectrum of issues with different symptoms which negatively influence the emotional state, behaviour, thoughts and cognitive abilities of people. The spectrum ranges from mild depression and anxiety to severe depression and psychoses, including alcohol and psychoactive substances abuse. The most people suffer from anxiety and depression.

<sup>135</sup> The YLD indicator (Years lived with disability), a component of the DALY indicator (according to the Schema in Chapter 15.1).

<sup>136</sup> Measured via preventable mortality indicator.

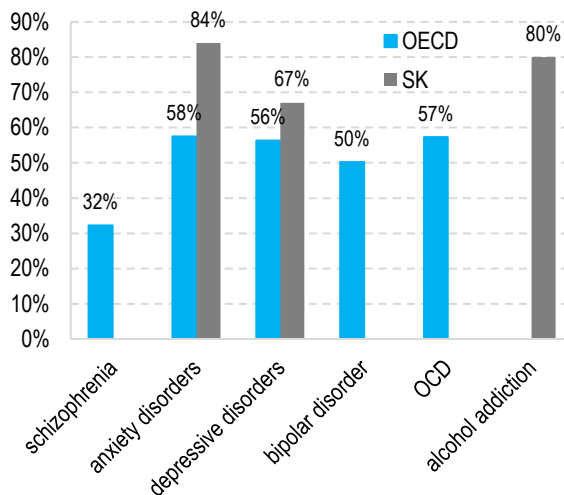
The data about the occurrence of mental disorders and expenses in Slovakia are very probably undervalued. Epidemiological research in Slovakia shows that as much as 67% of people with signs of depression and 80% of people addicted to alcohol are not treated and thus not included in statistics. The proportion of untreated patients amounts to 84% in case of anxiety disorders (Bražinová, 2019) (Graph 98). Besides poor accessibility of healthcare, one cause of the lack of treatment is social stigma. This can lead to inadequate and insufficient treatment, redundant increase in mental disorders and related individual and social costs. People with such issues often do not seek help for fear of prejudice. The stigma is connected to low awareness; people do not know how the care looks like and might be afraid of restrictive methods and involuntary admission to a psychiatric facility. According to the Slovak Chamber of Psychologists (SCP), many people are nowadays afraid that their condition will be mentioned in their medical records (mainly electronic ones). To feel safer and to preserve their privacy, they often seek help outside the health sector. Moreover, the sufferers and their relatives often cannot discern signs of a mental illness and often report physical symptoms and are treated for them.

**Graph 97: Mental illness burden during lifetime, % of burden in life out of all diseases, SK, 2017**



Source: GBDCN

**Graph 98: Proportion of untreated patients with a mental illness**



Source: OECD, Bražinová (2019)

## 16.2 Financial burden

Besides the burden for people with the disorder, mental illnesses also considerably contribute to overpriced health and social system and decrease the performance of the economy.

Direct expenses and part of indirect ones related to mental issues in Slovakia can be estimated at 1.8 billion euros (2.3% of GDP) based on OECD methodology<sup>137</sup>. Of which

- **480 million euros** translate to **direct healthcare** expenses: pharmaceuticals, hospital stays and doctor visits related to mental disorders.<sup>138</sup> The majority consists of expenses related to the treatment of physical diseases which are a consequence or an accompanying factor of many mental disorders. **Part of these expenses arise due to stigma and low awareness of patients, but also physicians.** According to Slovak Psychotherapy Society (SPS), many patients cannot distinguish panic attack from heart attack and call expensive ambulance instead of using a cheaper and more effective way to calm

<sup>137</sup> The method of calculation is stated in OECD (2018). The calculations include selected groups of disorders from category 10 of the International Classification of Diseases (ICD-10).

<sup>138</sup> OECD states the sum 655 million euros based on methodology by Gustavsson et al. (2011) which includes other diseases such as brain cancer, epilepsy, dementia, insomnia etc. The data in the graph do not include these diseases. A more precise form of calculation will be stated in the separate study of this topic currently in preparation.

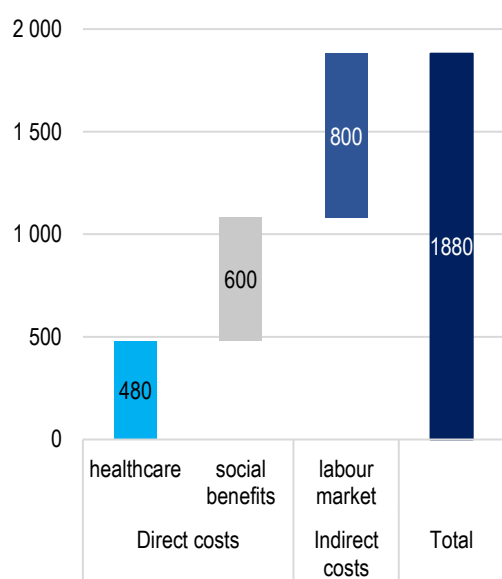
down. On the other hand, patients with mentally-induced physical symptoms are referred to expensive examinations at various specialists' for a long time; a psychologist or psychiatrist is often the very last resort.

- **600 million euros** represent direct expenses on **social support**: sick leave benefits, disability pensions, unemployment benefits or social benefits.
- **800 million euros** correspond to **indirect labour market expenses**: unemployment, lower work productivity, less hours worked or higher mortality of people in productive age (OECD, 2018). The majority of people with mental disorders are in productive age.

**However, the real expenses are even higher.** Besides labour market expenses, the indirect expenses include poorer education, discrimination of people with mental illness, burden for their close relatives and family, more frequent criminal activity committed by people with mental illness and against them and exacerbating social inequalities.

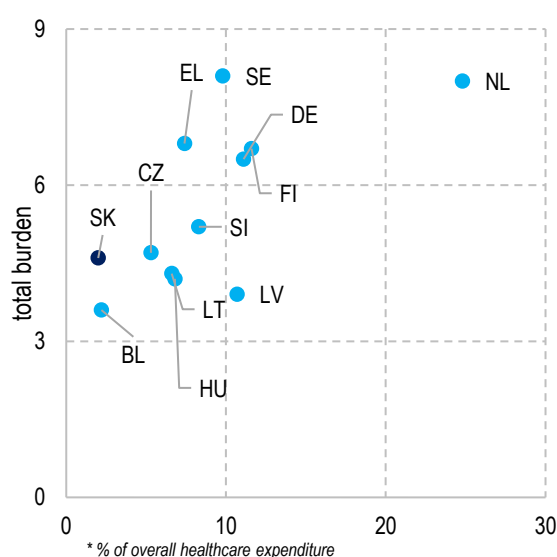
**Despite the great burden of the diseases on health and expenses, Slovak expenditure on mental health care lags behind other developed countries considerably.** This type of care only accounts for 2% of the total healthcare expenditure, while it represents 5% in the Czech Republic and 11% in Germany. **Slovakia spends little money also in terms of the great mental illness burden on people's lives.** Countries with a similar mental illness burden including premature death (i.e. the entire DALY indicator), such as Czech Republic, Hungary and Lithuania, allocate much more healthcare resources to this type of care (Graph 100).

**Graph 99: Direct and indirect expenses related to mental disorders in Slovakia, in million euros**



Source: OECD, 2018, calculations by VfM Division

**Graph 100: Expenses on healthcare focused on mental disorders and total mental illness burden in DALY\***



\*Expenses: Slovakia 2017, others 2013. Slovak expenses represent specialised and inpatient HC and pharmaceuticals.  
Burden: GBDCN 2017, % of total burden.

Source: Eurostat, NHIC, GBDCN

### 16.3 Increase in accessibility and effectiveness of mental health care

**Burden on people's health and negative social and financial impact can be reduced by the state by:**

1. **investments in effective programmes** for prevention of development of mental illnesses across sectors
2. **modern system** of health and social care
3. coordinated **intersectoral cooperation**

#### 4. investments in research

##### Investments in prevention and health promotion programmes

**Investments in prevention programmes against development of mental disorders across sectors are one of the most effective mental health measures and have a high return on investment (Patel et al., 2016).**

**One example can be found in the latest effectiveness analysis of eight selected programmes** in healthcare, education and social affairs **which bring in 1.3 to 39 pounds per 1 invested pound in the UK** in ten years,<sup>139</sup> of which 1.26 pounds on average already in the first year (Public Health England, 2017). Measures with the highest return on investment concerned self-harm prevention and social and emotional skills courses in schools. Return on investment is reflected in saved money which would otherwise be spent on healthcare, police and legal sector, also in improved school and employee attendance, higher employment rate and productivity.

**An effective tool to identify appropriate measures is distribution by age groups** because different risk factors influence people of different ages. **Measures focused on mental health promotion in early childhood are the most effective.** The period until three years of age is crucial for correct biological, cognitive and emotional development of a child because the brain develops at the fastest pace. The concept of higher return on investment in human resources in early childhood was mentioned also by economist James Heckman (2008). **School** is an ideal place to tackle mental health of children and adolescents, mainly thanks to compulsory education. **Workplaces and employment promotion services** are the most suitable places to intervene in adult population. The importance of **care not only about the physical, but also mental health of the elderly** increases with population ageing in European countries. Recommended measures for other age groups are summarised in Table 41.

**Table 41: Health promotion and prevention programmes per age group**

Age group	Types of programmes	ROI per 1 invested pound (PHE, 2017)
Early childhood	<ul style="list-style-type: none"> <li>healthcare and social care for pregnant women, appropriate childbirth procedures and active support several weeks after childbirth (see Chapter Childbirth)</li> <li>support programmes for play of children and parents and parenting skills</li> </ul>	-
School age	<ul style="list-style-type: none"> <li>emotional literacy training for pupils, i.e. how to understand and contain one's emotions, social skills development for children</li> <li>educational skills training for parents, mainly in combination with prevention of behavioural difficulties in children</li> <li>prevention and problem-solving programmes for bullying</li> </ul>	5.1 pounds in 2 years
People in productive age	<ul style="list-style-type: none"> <li>employee stress prevention, screening, awareness, support of employees with mental disorders, prevention for the unemployed with no disorder and support of the unemployed with a disorder</li> </ul>	2 – 2.4 pounds
The elderly	<ul style="list-style-type: none"> <li>community programmes, hobby groups and senior clubs, intergenerational activities, senior volunteering or volunteer visits to less mobile seniors</li> </ul>	1.3 pounds

*Source: OECD, World Bank, PHE (2017)*

**In prevention, it is important to focus on factors which affect vulnerable groups and people regardless of age.** Risk factors include chronic diseases, family feuds, physical and sexual violence, loss of a close person, long-term care of a sick relative, exposure to war, natural catastrophe and toxins. There are also interventions which can help all population groups, such as reducing the stigma and raising awareness of mental health issues, targeted screenings, human rights protection, cooperation of the police and justice in order to resolve family conflicts, suicide prevention, reduction of the accessibility of alcohol. Especially vulnerable groups include people at risk of poverty, the homeless, migrants and asylum seekers, members of the LGBT community and prisoners.

**There are targeted programmes in Slovakia for almost all the aforementioned areas and population groups, however, they are not a systemic solution.** The majority of them are conducted by non-governmental

<sup>139</sup> Individual interventions last for different periods of time (Table 41, column 3).

organisations and civic associations, they often function only regionally and get ad hoc subsidies from the state, which does not allow them to develop their activities systematically in the long term. An example of the unsystematic nature is that the League for Mental Health received a one-off grant from the Prime Minister's reserve fund last year to re-establish their helpline, however, the funding for the next year is still in question. The League states that during the time when the helpline was in operation, suicide rate dropped by 10%.<sup>140</sup> The National Mental Health Programme supported only 5 programmes worth less than 100,000 euros in 2017 (Annual Report of the MoH SR, 2017). **It is in public interest to ensure that the effectiveness, return on investment and financing requirements of these and other aforementioned programmes are investigated by the state and subsequently subsidised systematically.**

### Health and social care

**Health and social care is insufficient, poorly accessible and often even unsuitable.** Slovak psychiatry care reform (Hašto et al.) was prepared in 1991 and approved in 1999, however, it was never carried out properly. **However, investments in correct adjustment of the system and procedures have a high return on investment.** Higher investments in psycho-social treatment of depression and anxiety disorders in the USA bring in **4.5 dollars per 1 invested dollar** on average after fourteen years in effect (Chisholm et al., 2016).

The principles of modern care by WHO (2005) include mainly the transition from inpatient to outpatient and community care (deinstitutionalisation), adjustment of the distribution of competences among healthcare staff and the use of suitable treatment and therapeutic methods. **Czech Republic is currently implementing a mental health care reform which could serve as a model** for other countries with similar needs according to **European Psychiatric Association**.<sup>141</sup>

**Deinstitutionalisation rate of adult psychiatry in Slovakia is very low; on the other hand, there is a shortage of hospital beds for children and the elderly.** The existing facilities are outdated and with inadequate equipment; there are no facilities for "protective treatment" ordered by the court nor facilities for aggressive psychiatric patients. In comparison to the Czech reform, only 15% of staff requirements for adult facilities are fulfilled and day centres for gerontopsychiatry do not exist at all in Slovakia. Recommendations for the number of doctor's offices and staff requirements based on the Czech reform are fulfilled only halfway in case of adult care, outpatient care for children and the elderly is virtually non-existent. **Another issue is accessibility of care** due to uneven geographic distribution of psychiatric care providers.

**Due to their overall shortage, the psychiatrists are overburdened, which worsens patients' treatment.** According to the National Mental Health Programme of the SR, psychiatrists perform 30 examinations per day on average. One of the outcomes is that they often choose a quicker treatment by psychiatric pharmaceuticals instead of more time-consuming psychotherapy. Moreover, non-acute cases are postponed when an acute case is admitted; average waiting period for a psychiatrist is 7.3 weeks. **Best practice according to WHO is to extend the competences of general practitioners.** After a specialised training, general practitioners are able to improve the accessibility of care for patients while reducing the costs<sup>142</sup>. However, it needs to be ensured that general practitioners are well prepared for the new competences (see Chapters 5 and 11).

**Many countries' and professional associations' standards recommend psychotherapy as the first choice for a large part of mental disorders** – mainly anxiety disorders, mild forms of depression, eating disorders and personality disorders (NICE, APA). Pharmaceuticals are viewed rather as a supplement, pharmaceuticals without

<sup>140</sup> <http://www.vyliecmenezaujem.sk/>

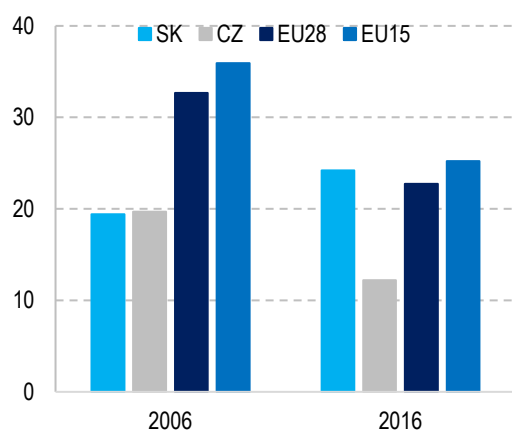
<sup>141</sup> <http://www.reformapsychiatrie.cz/>

<sup>142</sup> According to Slovak Psychiatric Society of the Slovak Medical Association (SPsS SLS), the competences of general practitioners will be properly defined within the implementation of standard diagnostic and treatment procedures (SDTP). According to Slovak Chamber of Psychologists, outcome-based treatment is not used enough in Slovakia. It should be implemented in the ongoing preparation of standard diagnostic and treatment procedures (SDTP). At the moment, there are approved SDTP for 4 disorders; however, these only allow for restricted competences of general practitioners (psychotic and schizoid disorders).

psychotherapy are not considered sufficient (SCP, Hewlett et al. (2014), SPsS SLS). **There is a shortage of professional psychotherapists in Slovakia.** According to NHIC data, there are 397 active clinical psychologists and 12 clinical psychologists for children. In comparison with the recommendations of the Czech reform, 1,200 psychologists lack altogether in both specialties. The shortage of professionals results in an unsuitable and insufficient treatment of mental disorders. **The shortage of psychotherapists is not caused by a lack of interest, but by obstacles to practice**, e.g. students have to pay for expensive certified psychotherapy trainings themselves and many graduates cannot enter the health system due to differences in the specialty. Another problem is insufficient reimbursements for psychotherapeutic procedures. Due to the obstacles in the system, it is easier for many psychotherapists to work in unregulated counselling services (such as “lifestyle” counselling) outside of the health system with exclusively out-of-pocket payments.

**Psychiatric pharmaceuticals are a suitable form of treatment for some mental disorders and patients, but they are often prescribed excessively and in inappropriate cases.** Anxiety pharmaceuticals were one of the most frequently used psychiatric pharmaceuticals, particularly in the past. Their current consumption in Slovakia is similar to the EU level, however, the tendency is not positive. **Benzodiazepines, the most common anxiety pharmaceuticals, are very often prescribed by doctors for long-term use, contrary to the recommendations.** It is typically not recommended to use benzodiazepines for more than 1 month because they are highly addictive (Department of Health and Children, IRL, 2002). In 2017, over 22% of patients who were prescribed benzodiazepines received more than 7 prescriptions for benzodiazepine per year. That means that they probably used the medicament for longer than a month and/or intermittently several times per year, even with some leeway (as per HIC data). Unlike anxiolytics, the consumption of antidepressants is growing in EU countries and has been significantly higher than in Slovakia for a long time. **Antidepressants are a better alternative to anxiolytics not only to treat depression, but also anxiety after initial stabilisation.** Although WHO recommends reconsidering the prescription of antidepressants and leave it out completely in case of mild depression and for children and adolescents, not all Slovak physicians stick to this rule due to lack of better alternative – psychotherapy.

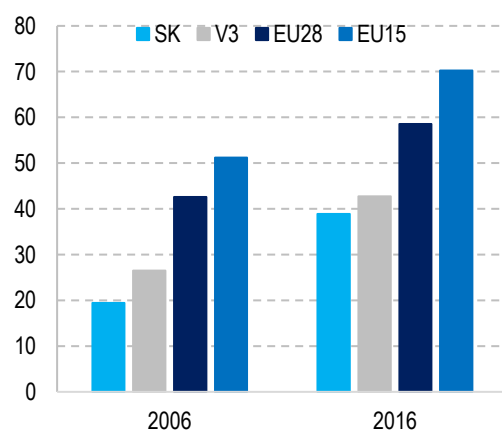
**Graph 101: Consumption of anxiety pharmaceuticals, DDD\* per thousand citizens**



\*DDD – daily defined dose

Source: OECD

**Graph 102: Consumption of antidepressants, DDD\* per thousand citizens**



\*DDD – daily defined dose

Source: OECD

### Intersectoral cooperation and research

**Effective mental health policies and their implementation require active intersectoral cooperation.** Close cooperation of the health and social affairs sector is crucial. Cooperation with the ministries of education, culture, justice, relevant NGOs and patients and their relatives should be done in parallel. **Slovak intersectoral cooperation in terms of mental health is failing.** The Council for Mental Health was created in 2005 along with



the National Mental Health Programme and an Action Plan. According to SPsS SLS, only the bare minimum of the necessary changes correctly outlined in the National Programme has been implemented and the Action Plan supports various initiatives insufficiently and unsystematically. **The cooperation between the health sector and social system is virtually non-existent.** However, the National Programme states that a person with mental disorder is having a hard time taking care of themselves after being discharged from a healthcare facility, often stops the treatment and their condition worsens unnecessarily.

**To correctly adjust the system and monitor mental health outcomes, it is necessary to promote research, mainly in terms of epidemiology.** An overall picture of the real occurrence of mental disorders in Slovakia does not exist even though it is the starting point for the next steps.

**Measures:**

- Health and social care – update psychiatric care reform based on the example of ongoing reform in the Czech Republic, focusing on the foundation of community centres and increasing staff capacities. The Czech reform was approved in 2013 with a budget of 6 billion CZK for the first 5 years of implementation, which amounts to 113 million euros in Slovakia (adjusted by the population)
- Conduct epidemiology research to ascertain the real occurrence and disease burden in Slovakia
- Create a strong intersectoral cooperation, mainly of the MoH SR and the MoLSAF and prepare a common prevention and care strategy
- Prevention and health promotion programmes – identify effective programmes, launch pilot programmes, subsequently evaluate and extend them with a considerable and long-term financial support from the state. Cover all groups with an emphasis on younger age groups.
- Prepare standard procedures for mental diseases, focusing on psychotherapy and less pharmacotherapy. Incorporate diagnostics and treatment of psychological symptoms into SDTP for physical diseases.



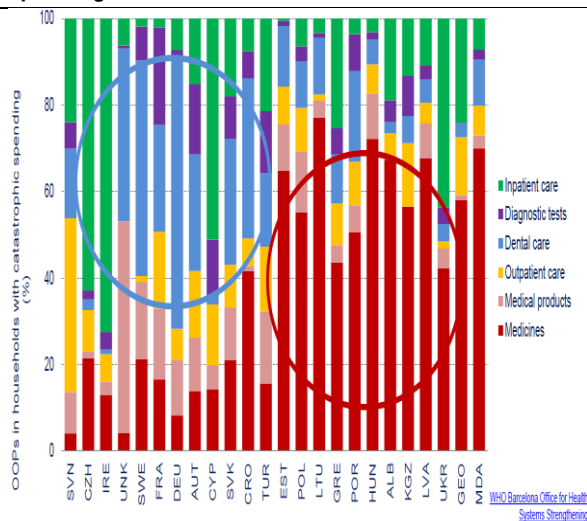
## Annexes

### Annexe 1: Out-of-pocket payments for healthcare

**OECD countries including Slovakia pay most of the OOP for pharmaceuticals and medical devices.** Regarding the type of healthcare, households in OECD countries pay the most for pharmaceutical healthcare including pharmaceuticals and medical devices, which constitute almost half of OOP for households. The share in Slovakia amounts to as much as 71%. The second largest OOP category is outpatient services including dentistry. This specialty is characterised by high patient co-payment in the majority of countries. Slovakia is far below the average in OECD countries in payments for outpatient services. In 2015, patients paid 10% of OOP at their dentist's and only 3% in other outpatient services.

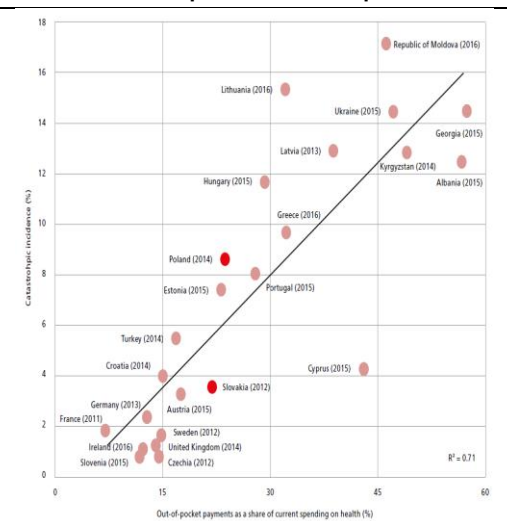
The amount of OOP and the risk of financial hardship has implications for policy-making as well. A higher proportion of OOP in total healthcare expenditure has a positive correlation with financial hardship of households. However, statistics also show that when adjusting the health system, it is not enough to focus only on the public-to-private resources ratio. **Slovakia and Poland do have a comparable proportion of out-of-pocket payments in the overall healthcare expenditure but the Slovaks face financial hardship due to OOP much less frequently than the Poles** (difference of 5 percentage points).

**Figure 1: OOP in households with catastrophic health spending**



Source: WHO

**Figure 2: Relationship between OOP and financial hardship as their consequence**



Source: WHO

#### It is possible to distinguish 3 groups of payments in terms of OOP reporting:

1. **Justified payments** are paid by the patients based on current legislation, healthcare providers keep them in their accounting and report them officially; in Slovakia, e.g. in the form of reports to the National Health Information Centre (NHIC).
2. **Unjustified payments** are demanded by healthcare providers officially (issuing a receipt) but they use them as a condition to provide healthcare to which a patient is entitled by the law.
3. **Illegal payments** involve bribes. Statistics presented in this chapter cover justified OOP and an estimate of bribes (more in Box 13).

**1. Legal out-of-pocket payments in Slovakia increase slightly year-on-year, with patients paying the most for dental care.** Out-of-pocket payments for healthcare increased from 2015 to 2017 by 7%. Payments in

inpatient care were growing at the fastest rate, patients paid less in doctors' offices (Table 42). The OOP portion in the overall healthcare expenditure was constant in the period 2015 – 2017 (18 – 19%).

**Table 42: Development of OOP in the SR per capita (euros)**

	2015	2016	2017
Total OOP	184.3	189.9	196.9
Medical material / pharmaceutical HC	131.2	131.3	135.9
Outpatient care	21.7	26.7	20.8
Inpatient care	31.3	31.9	40.2
<b>by reporting categories for NHIC (million euros)</b>			
Pharmaceuticals	427.16	432.62	444.85
Medical devices	92.59	77.89	82.14
Additional products	184.50	202.30	202.06
Other	295.42	317.55	341.51
<b>Total</b>	<b>999.32</b>	<b>1030.95</b>	<b>1070.56</b>

Source: OECD, Statistical Office of the SR, NHIC

In terms of specialties, Slovak citizens pay the highest OOP (payments for pharmaceuticals excluded) at the dentists', for spa treatment and at the gynaecologists'. In 2017, these three areas represented 61% of the other revenues, or 19% of the total OOP.

**Table 43: TOP 3 areas of inpatient and outpatient care in terms of OOP (2017)**

Specialties	Payments in million euros	Proportion in Other revenues	Proportion in Total OOP
Dentistry	109	32%	10%
Physiatry, balneology and medical rehabilitation	82	24%	7%
Gynaecology	18	5%	2%
TOP 3 total	209	61%	19%
Other	133	39%	14%
<b>Total</b>	<b>342</b>	<b>100%</b>	<b>32%</b>

Source: NHIC, STATISTICAL OFFICE OF THE SR

**However, legal out-of-pocket payments in Slovakia are not transparent and it is hard for patients to get familiar with the amounts and scopes of paid procedures.** The main reason is that the scope of HC to which every insured person is entitled from PHI is not clearly defined (so-called basic package – see Chapter 13.1.1).

As for the three areas mentioned in Table 43, the law<sup>143</sup> specifically determines the scope of reimbursements for provided HC and related services – whether specific diseases and medical procedures are reimbursed from PHI fully, partially or not at all.

**The scope of reimbursement and out-of-pocket payments for dental procedures are defined most specifically.** The government regulation No. 777/2004 distinguishes which procedures and under which indications are reimbursed from PHI fully or partially. Based on this regulation, patients are relatively well informed about their OOP for HC provided by a dentist. In general, PHI fully reimburses routine check-ups, acute examinations and treatment using standard dental products. Dental caries treatment is fully reimbursed from PHI on condition that the patient had a routine check-up in the previous calendar year.

<sup>143</sup> Law No. 577/2004, Government Regulation No. 777/2004

The majority of OOP for **Physiatry, balneology and medical rehabilitation** concerns healthcare provided within inpatient care in spas. The law defines the scope of reimbursements for spa treatment based on indications. It also determines fixed amounts paid by the citizens for accommodation and catering (Law No. 577/2004 § 38a).

In **gynaecology**, the law defines the scope of healthcare provided during routine check-ups (including preventive examinations during pregnancy) and fully reimbursed from PHI. The government regulation also defines the conditions for reimbursement of procedures related to induced abortion, sterilisation and IVF methods. The scope of reimbursement from PHI is defined by assessing health conditions for the given procedure.

**Poor transparency of legal payments and entitlements which have to be searched in various laws can lead to the patient not being able to identify an unjustified payment when the provider asks for it (the following point).**

**2. There is currently no overview of the amounts and structure of unjustified payments.** According to the health department of Bratislava Self-Governing Region, **the majority of such payments are demanded directly by HC providers** via web portals where they advertise the services as above-standard. These include particularly urgent examination, appointment for a specific time, telephonic information about test results or various healthcare packages which only include procedures fully reimbursed from PHI. General practitioners often demand payments for various medical certificates, such as for students enrolling to universities, for summer camps or jobs in the food processing industry and gastronomy. According to Bratislava Self-Governing Region, even health insurance companies might be motivated to overlook such violations of the law because the physician does not demand the payment from them. **Part of the unjustified payments are collected by third companies** which often manage patient appointments for specific times. This practice reduces the accessibility of HC for socio-economically weaker population groups. For example, some providers ask the patient to register at a separate reception before entering their premises. The patient thus cannot even enter the premises where they should be provided fully reimbursed care by a doctor in a contractual relationship with the health insurance companies. What is more, some of these facilities, such as ProCare, belong to a “minimum network” and by reducing accessibility of HC, they practically violate the law on minimum network.<sup>144</sup>

#### **Box 13: Sources of data on out-of-pocket payments**

OOP in Slovakia were monitored in three different ways – via national accounts, family accounts or economic statements by NHIC – and they all reported a different amount of OOP. Based on the results of a 2016 study<sup>145</sup> by the Institute of Informatics and Statistics, the most reliable source are the NHIC statements.

Until 2013 (inclusive), the Statistical Office of the SR reported OOP to international statistics based on **national accounts**. They were derived from general surveys of the Statistical Office about retail revenues and included an estimate of informal payments. Specialists and foreign institutions assessed this kind of reporting of household expenses as overvalued – compared to the other two data sources, the OOP were 1.7 to 2 times higher.

**Family accounts** are based on a sample survey of revenues and expenses of private households. The last sample survey was conducted in 2015 and served as the base for estimates in the following years. The data on out-of-pocket payments based on family accounts are usually undervalued compared to the real

<sup>144</sup> Law No. 578/2004 and Government Regulation No. 640/2008

<sup>145</sup> Michal Mladý, Návrh výpočtu odhadu výdavkov domácností z vlastného vrečka na zdravie v súlade s metodikou SHA 2011 za rok 2014 v členení podľa klasifikácie funkcií zdravotnej starostlivosti (HC) a klasifikácie poskytovateľov zdravotnej starostlivosti (HP); INFOSTAT, Institute of Informatics and Statistics, 2016

expenses.<sup>146</sup> The first reason is sample selection – it usually does not include people living in inpatient facilities (hospitals, nursing homes etc.), even though they have higher healthcare expenses. Another reason is the inability or unwillingness of respondents to disclose all their expenses. As a result, family accounts show the lowest OOP of the three sources.

**NHIC economic statements** are filled in by healthcare providers and providers of services related to healthcare provision. They include data inter alia about the revenues of HC providers divided into revenues from HIC and from citizens. The average return rate of filled-in reports from 2015 to 2017 was 78.3%. After recalculating the items to 100% and comparing the data with HIC reports, only a negligible deviation was detected. The aforementioned study of OOP calculation by INFOSTAT included an estimate of informal payments<sup>147</sup> and the balance of healthcare expenses of Slovak residents abroad and expenses of non-residents in Slovakia. These two effects counteracted each other in a similar amount and balanced each other out. The actual amounts paid in OOP can be estimated roughly as the revenues from citizens in NHIC economic statements recalculated to 100% of reporting agents.

#### **Box 14: Out-of-pocket payments in NHIC economic statements**

Economic statements for healthcare organisations keep records of OOP in 4 categories:

- a) Pharmaceuticals – includes out-of-pocket payments for prescription pharmaceuticals, revenues for over-the-counter pharmaceuticals and pharmaceuticals which are administered directly by physicians in healthcare facilities and paid by the patient
- b) Medical devices – payments for devices fully or partially paid by the citizens
- c) Additional products – medical products without an assigned ŠÚKL-code and all dietetic food in a categorisation list
- d) Other – co-payments by patients, payments for HC not reimbursed from PHI, payments to non-contractual providers, payments by private patients, payments for extra services, choice of physician, drawing up certificates, sale of additional products by a provider.

The methodology used by the Statistical Office of the SR to report the data to international institutions integrates pharmaceutical HC in the first three categories. The “Other” category includes additional services of *opticians*. The rest of *Other revenues* is divided among outpatient and inpatient HC according to the facility.<sup>148</sup>

Revenues are assigned to specific cost centres corresponding to individual specialties. The reports thus help calculate the OOP according to physicians’ specialty.

<sup>146</sup> World Health Organization – Estimating out-of-pocket spending for national health accounts, 2010

<sup>147</sup> The estimate was based on a survey by Focus agency for Transparency International Slovakia from early 2015 on a representative sample of 1,000 respondents aged 18+.

<sup>148</sup> Types of facilities: 0-non-medical facility, 1-ward, 2-doctor’s office, 3-facility, 4-one-day HC facility, 5-CETU facility, 6-care centre, 7-tissue establishment, 8-central admission facility and inpatient emergency service, P-delivery room, S-operating theatre. Only type 2 is considered outpatient HC, the rest of the facilities belong to inpatient HC.

## Annexe 2: Competences of physicians

First of all, it concerns patients with type 2 diabetes without complications. GPs for adults do not have the necessary equipment (e.g. ophthalmoscope to examine optic fundus) and are considerably limited by prescription restrictions for peroral antidiabetics. As much as 90% of diagnosed diabetics in Slovakia suffer from type 2 diabetes. According to OECD, early and effective treatment of this disease by a general practitioner has the potential to reduce avoidable hospital admissions rate related to this disease. Another priority is the management of patients with thyroid diseases – hypothyroidism or hyperthyroidism. Some of the current obstacles are lack of diagnostic competences (free thyroxine test and aTPO antibodies) and prescription restrictions for levothyroxine. In case of ear infections, a GP could use an otoscope and thus accelerate the initial treatment. Authorisations to prescribe topical antibiotics for ear and eye infections could also be extended.

**Table 44: Procedures which could be performed by general practitioners**

Disease	Procedure	Procedure – code	Volume of procedures	Total reimbursement from PHI, in euros
diabetes mellitus, type 2	optic fundus examination by an	1246	568,890	1,415,670
	ophthalmoscope	1246A	84,412	351,864
ear infections	otoscopy	1544	188,488	405,537
		1544A	498,900	3,832,781
hypothyroidism	FT4/free thyroxine	4330	613,557	2,070,313
		5766	449,464	1,636,857
bronchial asthma	spirometry/spirography	5766R	73	803
		5773	859	8,423
<b>Total</b>			<b>2,404,643</b>	<b>9,722,249</b>

Source: eHealth

## Annexe 3: Healthcare systems

### Public resources:

**1. Taxes (general tax revenues of the state)** – people pay various types of taxes to the budget, such as income taxes, VAT or corporate taxes. The state then allocates part of these taxes to healthcare according to determined priorities and provides healthcare to all citizens. Taxes are the main resource in the United Kingdom, Spain, Denmark, Ireland. They include general taxes (a global budget package is collected and subsequently allocated to different sectors) or earmarked healthcare taxes. Earmarked taxes can be paid e.g. by the EAP as income taxes or some kind of consumption tax, such as tobacco tax (Australia, Scandinavian countries, Germany, Poland, UK), alcohol tax (France, New Zealand) or lottery tax (UK).

**2. Public health insurance (PHI)** – funded mainly by contributions of economically active people and dedicated directly to healthcare. Like every insurance, it is used to cover uncertain future expenses by redistributing the risk of development of a disease to a large number of insured persons. The amount of future healthcare expenses for individuals is uncertain because many diseases cannot be predicted. What is more, the treatment of some diseases can even be unacceptably costly for individuals. Unlike commercial insurance of economically inactive people (children, the retired, the unemployed), many countries pay the contributions from their own budget and often regulate the amounts paid. Public health insurance (PHI) is the main resource in Germany, France or Slovakia. It can be managed by one or several health insurance companies, public or private.

In terms of public resources, countries differ in whether they cover

- part of the population (e.g. children, the elderly, the poor in the USA) or the entire population (France, Slovakia)
- selected services (such as the defined standard package in the Netherlands) or the entire healthcare (Slovakia)
- all expenses on treatment or patients pay OOP themselves
- expenses only from a specific amount (so-called deductibles, e.g. in the Netherlands, where patients had to pay the first 358 euros in 2017)

### Private resources:

**3. Private health insurance** – the principle is similar to PHI, the insurance is bought as a product directly by consumers who are then insured against the risk of high treatment expenses in the future. The amount paid (the insurance premium) depends on the demand and offer but also on the buyer's health condition. It is used mainly in the USA and Switzerland. In the majority of developed countries, it covers only 10% of healthcare expenses.

**4. Out-of-pocket payments** – OOP are used less in rich countries (approximately 10 – 20% of the total healthcare expenditure), for specific type of care or procedures, such as in dentistry or ophthalmology.

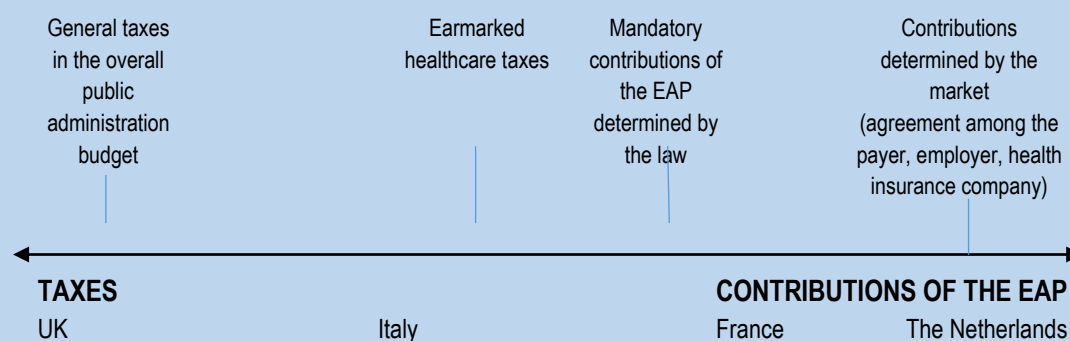
**It is in public interest of the majority of developed countries to cover at least part of healthcare services from public resources.** In a free market, a consumer buys services depending on their health condition and willingness to pay, which creates obstacles for poorer people and those with a very costly treatment. Since it is in the interest of the majority of countries to give access to healthcare to all citizens – either for economic (healthy people produce more) or social reasons – it is suitable to provide at least part of the funds from public resources which can be better reallocated to poorer and sick citizens.

## Taxes or contributions of the EAP

Healthcare funding from taxes or contributions to PHI is basically similar, the only differences are in the manner of implementation. It is necessary to adjust public resources to be transparent to the consumer and so that they are willing to pay them, resilient to economic cycle and able to ensure a fair redistribution in the population (McPake et al., 2002). Based on these conditions, they can be illustrated on the following spectrum in the Box 15.

### Box 15: Attributes of healthcare funding from taxes and contributions

#### Spectrum



#### 1. Transparency and acceptability

**The contributions from the right-hand end of the spectrum ensure the most transparent cashflow and are potentially more acceptable for the payers.** If a person pays a specific amount from their salary for healthcare contributions, they know that this money will be used exclusively in healthcare. However, this certainty does not exist if the resources are collected from various taxes which can be used by the state for other priorities in the end, such as education. In this case, consumers feel like they have no control over their contributions, which might result in reduced willingness to pay taxes. Research has shown that people are more willing to pay, even higher amounts, if they know where the money is going. One of the ways to increase tax transparency is to earmark part of them for healthcare, as is the case in Italy.

Other advantages of earmarking taxes and contributions include the potential to increase awareness of the value of services in the population. Some disadvantages might include reduced flexibility when allocating budget to sectors, which can decrease the effectiveness, coordination and cooperation between sectors (mainly health and social affairs). It is also true that the advantages do not always translate into practice. Governments in many countries have not respected the earmarking of funds for healthcare. Transparency of the system of contributions also reduces the need for additional funding by the state.

#### 2. Independence from the economic cycle

**Taxes can be dependent on the economic cycle to a lesser extent.** Different types of taxes ensure diversified cashflows into the budget and part of them is paid also by economically inactive people. On the other hand, contribution of the EAP and many earmarked taxes depend on employment rate and salaries. Wagstaff et al. (2009) pointed out that contributions required from employees and employers decrease employment rate. Employees and employers might also try to avoid paying contributions via various informal



forms of employment. On the other hand, if the amount of contributions is regulated strictly by the state (not determined by an agreement among the employee, employer and health insurance company), health contributions act practically as an income tax.

### 3. Redistribution of resources in the population

**Taxes can ensure better redistribution of resources in the population.** Collection of contributions of the EAP can be connected to the so-called adverse selection, i.e. when health insurance companies deliberately refuse to insure people who they consider too high of a risk in term of costs (e.g. very sick people). Regarding tax package, the state directly ensures the entitlement to healthcare for parts of the population determined by the society. However, in practice, many countries solve this problem with contributions by legal obligation to insure all citizens. At the same time, capital taxes, corporate taxes or property taxes can be more progressive than contributions of the EAP, i.e. they can ensure that wealthier people contribute a larger part of their property than the poorer population.

### 4. Costs/expenses management

**It is not entirely clear whether healthcare expenditure can be managed more effectively under the tax system or contribution system; however, contributions can cause higher administrative expenses.** Higher and faster healthcare expenses are more often found in systems with PHI. This can be partially explained by people's willingness to pay higher insurance premium; however, it is not true when the amount of contributions is determined by the state. Administrative costs should be lower if taxes are managed in an existing system than in case of contributions, which have to be managed by health insurance companies.

*Source: Cashin et al. (2017)*

#### Box 16: Health insurance system in the Netherlands

**In 2006, the Netherlands implemented a managed competition system which assumes the existence of several private health insurance companies (HIC) and the state acting as a “sponsor” who lays out the basic rules** of competition in order to guarantee accessible and high-quality healthcare for its citizens. Health insurance companies buy healthcare from private providers individually, which puts pressure on the price and quality of healthcare. The state defines a basic healthcare package (see below), manages changes of insurance, supervises service quality and compensates the risk which HIC undergo by insuring some population groups.

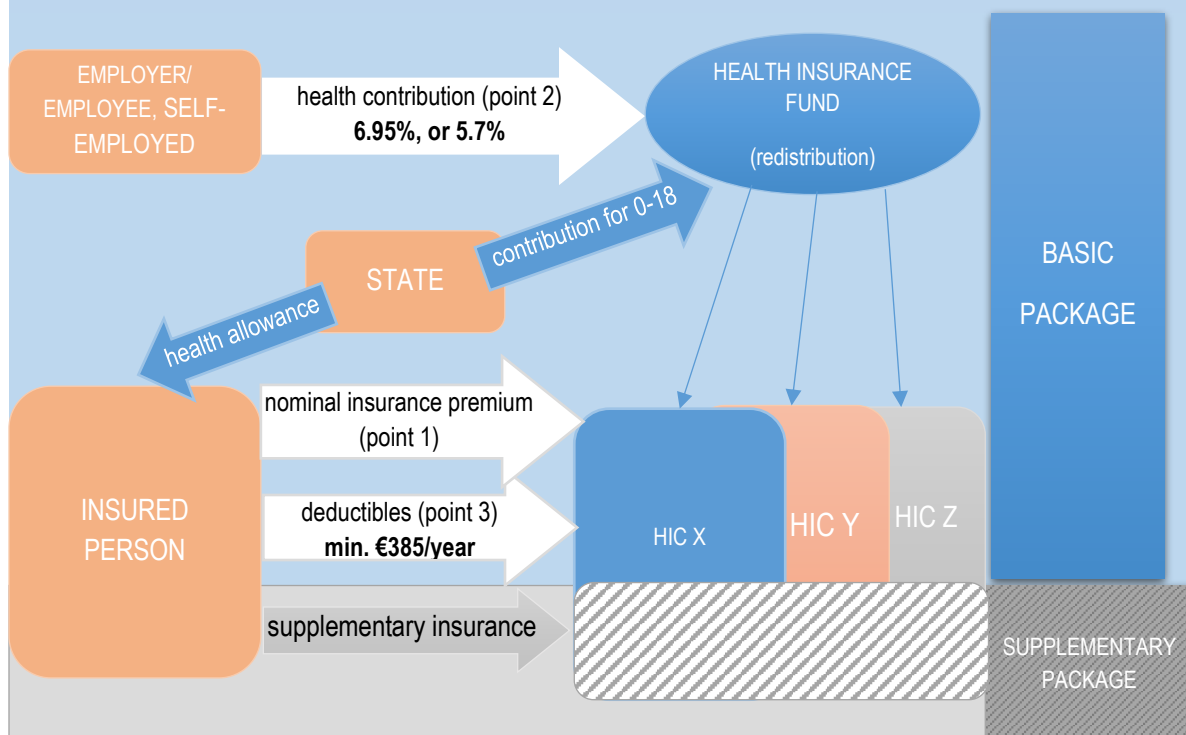
**There are 24 private health insurance companies in the Netherlands at the moment, however, the actual extent of their competition is questionable.** HIC are grouped in nine holdings, while the four largest holdings cover approximately 90% of the market. Market shares of HIC (holdings) do not change significantly and no new health insurance company has entered the market since the implementation of the reform in 2006.<sup>149</sup> Another indicator of their competition is change rate. According to available information, almost 70% of insured persons did not change their HIC at all between 2006 and 2015 and 20% changed their HIC once in the monitored period. On the other hand, the change rate in the Netherlands between 2018 and 2019 was the highest out of the last five years. As much as 7% of insured persons changed the HIC. The change rate in Slovakia is currently 2.6%. Health insurance companies can compete in the nominal amount of insurance

<sup>149</sup> Based on a study by Netherlands Authority for Consumers and Markets: *Competition in the Dutch health insurance market* (Feb 2016)



premium, price and scope of supplementary insurance products and the number and quality of contracted providers.

### Schema: Basic package, supplementary package and their funding in the Netherlands



Every citizen older than 18 years has to be insured in one of the private HIC which entitles them to benefits defined in the basic package. Funding of the package is illustrated in the Schema and consists of the following parts:

#### 1) **Basic health insurance (BHI, so-called nominal insurance premium)**

Every citizen over 18 must buy insurance directly from one of the private HIC. The payment is called nominal insurance premium. This obligation involves also economically inactive people – the retired, students, the unemployed, etc. Average annual amount of nominal insurance premium in 2019 was 1,432 euros. The state pays insurance for citizens under 18 from taxes into Health Insurance Fund. In order to ensure adequate healthcare for every citizen, the state supports the insured persons who otherwise could not afford to buy the basic health insurance to various extent (via so-called healthcare allowance).

#### 2) **Health contribution**

Employers pay the health contribution for their employees, amounting to 6.95% of their salary. The self-employed and citizens on social benefits pay a contribution of 5.7% in their taxes. The contributions are collected in Health Insurance Fund.

#### 3) **“Own risk” (so-called deductibles)**

Obligatory deductibles amounting to €385 are paid by every citizen aged over 18. It means that every insured person must pay the first €385 of their healthcare expenses from the basic package out of pocket. Exceptions include for example general practitioner visit or mother and child care – in these cases, the resources are not taken from the 385 euros “credit”. The goal of deductibles is, on the one hand, to raise awareness of healthcare

expenses, and on the other hand, to discourage the citizens to excessively use healthcare services when not necessary. Beyond obligatory deductibles, an insured person can voluntarily increase their deductibles up to €885. In this case, they pay lower monthly insurance premium, but also face a greater risk (in case of unforeseen health complications, they can pay more in deductibles than they have saved on the nominal insurance premium).

**Resources from Health Insurance Fund (i.e. contributions and state contributions for children) comprise approximately 50% of healthcare resources. The state distributes them among health insurance companies based on risk assessment of their insured persons.**

**Healthcare offer consists of a basic package and benefits from a supplementary insurance. Basic package<sup>150</sup>** is a legally defined healthcare package guaranteed by the BHI and has the same content in all health insurance companies. The price of the basic package (nominal insurance premium) differs in each HIC because they have the option to negotiate conditions with healthcare providers individually. The basic package includes vital healthcare: GP visit, specialist visit, inpatient HC, blood tests, mental health care, mother and child care, prescription pharmaceuticals, dental care for people under 18, partially dental care for adults and others.

**Beyond the basic package, an insured person can use supplementary insurance offered by each HIC in the form of voluntary supplementary insurance** (they can buy it from a different HIC than the one where they have bought the basic package). Insured persons usually buy supplementary insurance for dental care, benefit for the purchase of glasses, alternative medicine or more complex healthcare abroad. The option of supplementary insurance is used to a varying extent by approximately 85% of people.

## Basic healthcare package

**Systems abroad differ in how they determine the scope of healthcare reimbursed from public resources.**

The scope can be determined:<sup>151</sup>

- **explicitly** (including or referring to a complete list of procedures, services and pharmaceuticals), or **implicitly** (the law generally refers to a broader category, such as “primary care services”),
- **positively** (referring to what is reimbursed), or **negatively** (what is excluded from the reimbursement).

OECD countries define reimbursed HC via a combination of the aforementioned ways. The majority of them uses a central positive explicit definition for pharmaceuticals, while the manner differs for procedures and services.

**If the scope of reimbursed healthcare is defined explicitly, it is called a basic healthcare package.** This package has three basic dimensions:

1. **Population coverage – describes who is entitled to the basic healthcare package** and the legal basis for this entitlement (constitution, other law). It also specifies population groups which are not obliged to pay for the basic package in the form of taxes or contributions (the retired, children, the unemployed).
2. **Scope of healthcare – specifies which healthcare, i.e. which “benefits”, are included in the package.** A positive definition prevails e.g. in France and Belgium where 7,000 – 8,500 benefits included

<sup>150</sup> For more information about the basic package, see Chapter 1.1.3 of the Review.

<sup>151</sup> <https://www.oecd-ilibrary.org/docserver/5jlnb59ll80x-en.pdf?expires=1563275906&id=id&accname=guest&checksum=215125674DE89B6F24919C8090D23EA9>, p. 9

in the basic package are listed directly. A negative definition mentions a broadly described reimbursed HC and includes lists of services not covered in the package (Switzerland, the Netherlands). A combined system is used in Italy where the majority of services and procedures are listed in a positive list and the negative one includes e.g. plastic surgery, laser eye surgery etc.

3. **Extent of coverage – defines the extent to which the expenses on services and procedures from the basic package are reimbursed by the state.** It is hard to compare countries in this regard since they use different funding mechanisms of the basic package which are in turn reflected in different conditions of coverage and co-funding.

Abroad, the basic package typically covers GP visit, specialist visit, hospital stay, reimbursement of prescription pharmaceuticals, some medical devices (for the hearing-impaired, orthopaedic), treatment of language impairments, mother and child care, basic vaccinations, etc. In some countries, the basic package includes also specific benefits, such as alternative medicine covered to a large extent in Switzerland (Chinese medicine, homeopathy, herbalism) or basic dental care in Germany. **The content of the package does not remain static in time, its changes can reflect the development in population health.** In the Netherlands, they use the definition of the package from 2006. The Dutch Ministry of Health regularly adjusts the package content according to the current needs of the population, often in cooperation with their analytic departments which prepare prognoses of the development of population health and other healthcare determinants.

**In Slovakia, an insured person cannot find a clear and legible information about the scope of healthcare to which they are entitled from PHI.** According to the Constitution of the SR, “the citizens shall have the right to free healthcare and medical equipment for disabilities under the terms to be provided by law”<sup>152</sup>. Slovak legislation defines the basic package both positively and negatively and quite broadly; the law allows a payment by insured persons in some cases:

1. **Definite full coverage from PHI** – the types of healthcare which are always fully reimbursed are: urgent healthcare, routine check-ups, medical procedures with the goal to diagnose a disease, medical procedures provided within the treatment of priority diseases<sup>153</sup> and spa treatment following outpatient/inpatient care under specific indications<sup>154</sup>.
2. **Healthcare definitely not reimbursed from PHI** – includes healthcare not indicated from medical reasons, e.g. HC provided by a counselling/occupational psychologist
3. **Other medical procedures with patient OOP according to diagnoses** – in case of diagnoses specifically determined and highlighted in the List of diseases,<sup>155</sup> patient pays for the entire treatment or for its part depending on indication restrictions. In practice, OOP is determined as a percentage of the total sum paid for healthcare (0% to 100%). Individual diseases have assigned procedures from the Medical Procedures Catalogue. If they are not fully reimbursed from PHI, the physician has to post a list of such procedures and their prices to a visible place. The prices of procedures are determined by the physician up to the maximum amount of co-payment laid out in the law and relevant regulations.

**Non-medical services related to healthcare provision (e.g. catering, hospital stay) are reimbursed from PHI in relatively clearly defined cases**<sup>156</sup>. These services are reimbursed from PHI fully/partially only if the related HC is reimbursed from PHI fully/partially. Full reimbursement from PHI in case of an indicated medical

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<sup>152</sup> Article 40 of Law No. 460/1992 Coll.

<sup>153</sup> The list of priority diseases is found in the Annexe No. 3 of the Law No. 577/2004

<sup>154</sup> The indication list for spa treatment is found in the Annexe No. 6 of the Law No. 577/2004

<sup>155</sup> <https://www.noveaspi.sk/products/lawText/1/58952/1/2/nariadenie-c-777-2004-zz-ktorym-sa-vydava-zoznam-chorob-pri-ktorych-sa-zdravotne-vykony-ciastocne-uhradaju-alebo-sa-neuhradaju-na-zaklade-verejneho-zdravotneho-poistenia>

<sup>156</sup> Law No. 576/2004 §13. They also include e.g. electronic data processing, statistic processing of a prescription/request form, transport, stay of accompanying person, medical assessment, extract from medical report

procedure involves patient appointment for an examination including setting a specific time, preparation of a prescription/request form, referral, proposal for spa treatment or confirmation about doctor visit – physicians cannot ask a fee for these services from a patient.<sup>157</sup> If a patient has to pay out of their pocket, the law clearly defines the amounts to be paid for these services and people who are exempt from these fees. Unlike patient co-payment for provided healthcare determined in the List of diseases, patient OOP for related services are defined by a fixed amount.<sup>158</sup>

**The scope of HC reimbursed from PHI is thus laid out in the law, however, it is very confusing for the patient, mainly in case of diseases with a varying extent of patient co-payment in the List of diseases.** The problem for a patient is that the law determines a maximum amount of OOP in terms of diagnoses, but the physician publishes a price list of individual procedures – the patient does not necessarily know which procedures are necessary for their disease and, therefore, whether the OOP demanded by the physician is justified.

**Table 45: Comparison of basic packages, selected countries**

	<b>Slovakia</b>	<b>the Netherlands</b>	<b>Switzerland</b>	<b>Germany</b>
Definition of basic healthcare package	partial definition – positively and negatively	clear definition in legislation – negatively	clear definition in legislation – negatively	defined for basic health insurance (not everyone is obliged to have BHI)
Transparency of OOP	low	medium/high	high	medium
Voluntary health insurance	no	yes	yes	yes
Specific benefits included in basic package	-	dental care for citizens under 18	dental care in specific cases, alternative medicine	basic dental care for everyone

If this definition is missing, it is difficult to create a supplementary health insurance product.

**Table 46: Types of voluntary health insurance**

<b>Type</b>	<b>Purpose</b>	<b>Examples of EU countries</b>
Substitute	Covers the insurance of citizens without BHI and part of the population which is excluded from BHI or can voluntarily decide to buy substitute insurance.	GER
Supplementary (procedures)	Covers benefits not covered by BHI, e.g. dental package, physiotherapy, mental health care, etc.	DNK, HUN, NLD
Supplementary (scope of reimbursements)	Covers costs beyond state reimbursement	BEL, FRA, SVN
Supplementary (quality of healthcare)	Covers faster access to HC and broader selection of HC providers	IRL, POL, ROU, SWE, UK

### Health insurance companies in Slovakia

**One of the preconditions and advantages of a pluralistic system is that health insurance companies compete in areas directly related to the quality and scope of healthcare provided to the insured person, i.e. health benefits. However, health insurance companies in Slovakia do not compete in their offer of**

<sup>157</sup> Law No. 577/2004 § 3 Article 4

<sup>158</sup> No. 577/2004

**health benefits.** Despite differing partially in their offer of extra vaccination<sup>159</sup>, extra examinations<sup>160</sup> and some dental benefits, these differences are usually not communicated clearly to the potential insured person. For example, in case of extra vaccinations, the reimbursement is bound to a specific type of vaccine, patient's age and various other conditions which make the offer more complicated. There are significant differences among HIC in how visibly they advertise their offer of extra benefits on their web pages. Patients can find some benefits only after purposefully searching subpages, while the home page focuses more on other types of benefits described below. Therefore, it is hard for an insured person to compare the offer of health insurance companies on their own. There has been no up-to-date and impartial platform that would collect and present the information for comparison so far.

**In the recent years, the most intense competition among health insurance companies has been taking place particularly regarding benefits not related directly to quality or scope of healthcare for insured persons; they can thus be called additional benefits.**<sup>161</sup> They include e.g. electronic services and mobile applications. Other additional benefits are more advantageous offers on discount portals (they appear as the most visible advertisement on website home pages), holiday stays, more advantageous travel insurance, discounts on cosmetic products and supplementary products in some pharmacies etc. Health insurance companies typically offer benefits after childbirth such as discounts and contributions for the purchase of products for newborns. Their value does not differ significantly among the HICs.

**In some cases, health insurance companies offer benefits which are not recommended by experts to be used across-the-board.** One of the health insurance companies offers free-of-charge lending of baby breathing monitors for up to 6 months after birth. According to the manufacturers, the monitor is intended to detect a respiratory arrest, particularly in case of sudden infant death syndrome (SIDS). American Academy of Pediatrics<sup>162</sup> and other experts<sup>163</sup> have been long pointing out that the use of such devices at home does not guarantee an early detection of health complications of a newborn, such as SIDS. They also agree that physicians should recommend the use of the monitor only in specific cases (e.g. for prematurely born babies) and properly train parents before use. According to the experts, the use of the monitors in other than specified cases often leads to unjustified worries and inappropriate reactions (for example, parents excessively calling the rescue service).

### Risk equalisation among HIC

**In a pluralistic system, health insurance companies receive money from PHI based on the number of insured persons and their contributions. However, there is a risk that costly insured persons will not be redistributed evenly among the HIC** – e.g. all patients prone to illness might be insured in one health insurance company and all healthy patients in another. Therefore, the costs of treatment of these patients will not correspond to the revenues, which will create losses for one HIC, while the others will have extra money left. Due to this inequality in revenues and expenses, HIC strive to get healthy insured persons and put the costly ones at disadvantage.

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<sup>159</sup> vaccinations partially or fully reimbursed by the HIC beyond legal requirements, such as flu vaccine, hepatitis vaccine etc.

<sup>160</sup> examinations partially or fully reimbursed by the HIC beyond legal requirements or entitlement to more examinations of a specific type than laid out in the law, such as urgent mammography etc.

<sup>161</sup> according to an overview of offers on web pages of individual HIC

<sup>162</sup> AAP TASK FORCE ON SUDDEN INFANT DEATH SYNDROME. SIDS and Other Sleep-Related Infant Deaths: Updated 2016 Recommendations for a Safe Infant Sleeping Environment. *Pediatrics*. 2016; 138(5): e20162938

<sup>163</sup> Strehle EM, Gray WK, Gopisetti S, Richardson J, McGuire J, Malone S. Can home monitoring reduce mortality in infants at increased risk of sudden infant death syndrome? A systematic review *Acta Paediatrica* 2012; 101(1): 8 – 13.

In many countries, a fair redistribution of resources is ensured by a so-called risk equalisation mechanism. It basically identifies the risk level of the insurance portfolio of each health insurance company and subsequently transfers resources to HIC with more costly patients. When the system is set correctly, the HIC can focus on effective treatment of patients with any risk profile since no group of patients is unprofitable for them in the long term. Some type of risk equalisation mechanism is used by countries such as Belgium, Germany, the Netherlands or Slovakia.

#### Box 17: The principle of redistribution mechanism

The “ex-ante” redistribution mechanism is based on a statistical model predicting future average expenses per patient. The majority of prediction models uses:

- **Demographic indices** – age, sex and type of insured person (economically active citizen or state-insured person). The prediction of expenses relies on the fact that the elderly and children are sick more often than young working people. The advantage of demographic indices is their high capability to predict patient’s costs but also easy access to data.
- **Indices based on pharmaceuticals consumption (PCG indices)** – future expenses per insured person are predicted based on their long-term consumption of pharmaceuticals for a specific chronic disease. When a patient uses pharmaceuticals for a long time, their expenses increase due to the price of the pharmaceuticals and also related outpatient and inpatient care procedures. The model works with the so-called pharmaceutical cost groups (PCG groups). Thanks to PCG indices, health insurance companies are compensated for the treatment of chronically ill patients on average and even have the motivation to create special programmes for the chronically ill in order to reduce costs. If one HIC has a comparative advantage over the others (e.g. using equally effective but less expensive treatment), the HIC can show profit after the redistribution of these patients.
- **Multi-annual cost indices (MACI)** – reflecting actual expenses per insured person in the past. These indices are advantageous if PCG groups are too broad (e.g. some autoimmune diseases are much more expensive than others) or if a patient has high long-term costs but does not belong to any PCG group. The advantage compared to PCG groups is that insured persons can be included in the MACI groups fairly easily. The disadvantage can be that health insurance companies will be less motivated to choose the most effective treatment because a more costly treatment can get the patient classified in a higher MACI group and have part of the ineffective treatment compensated by the redistribution mechanism. It should not be a problem in practice since health insurance companies do not know in advance which insured persons will be classified in which MACI groups (the thresholds change every year and HIC cannot learn them in advance). The MAC index monitors the expenses in the last three years; therefore, a health insurance company probably would not achieve a higher MACI group by increasing its expenses in one year. This course of action thus would not be profitable. Another eventual problem is the approach of the HIC towards the patient – while in case of PCG groups, health insurance companies can prepare programmes for the management of specific diseases to include chronically ill patients and search for the most effective treatment for them, with MACI, one group includes insured persons with very diverse diagnoses and eventual sources of costly treatment.
- **Indices based on medical devices use** – future expenses of an insured person are predicted based on the use of a specific type of devices such as devices for the disabled, orthopaedic prostheses or incontinence products. These devices are often expensive and not included in demographic and PCG indices.
- **Diagnostic cost groups (DCG)** – the use of diagnosis as a prediction parameter of future costs is a logical and intuitive solution. For example, a patient with diagnosed chronic kidney disease will



very probably require increased healthcare costs in the following year. DCG overlaps with PCG groups to a certain extent since diagnosed chronically ill patients often use pharmaceuticals for a long time. However, this is not always true – for example, a patient with diagnosed infarction might undergo rehabilitation treatment and eventually a surgery, but does not necessarily have to be reported in the model as a chronically ill patient based on their pharmaceuticals consumption. The implementation of this parameter is more difficult and less transparent than PCG or MAC indexes because there are thousands of diagnoses which need to be grouped correctly in order to be usable and useful in the model.

- **Length of insurance** – the model predicts general average expenses for a certain insurance period, e.g. 12 months. However, there is always a group of insured persons who are insured for a shorter period – newborns, the deceased or new emigrants or immigrants. If a model is adjusted by the number of months, it is taken into account that the more months, the lower the chance of too low or too high expenses caused by a short time period observed.

**The “ex-post” redistribution mechanism compensates the expenses on insured persons not included in the ex-ante model.** No model, albeit very good, can provide for all patients; there are some with high expenses in the long term but the model does not assign them a high redistribution factor, for example because they do not belong to any defined group of chronic diseases. One example can be a patient with a very rare disease who uses very expensive pharmaceuticals for a long time and is unprofitable for the HIC. Even just a few of such insured persons can influence the outcomes of a health insurance company. The solution can thus be that all the HIC bear this risk together.

However, ex-post redistribution poses a considerable risk – if a health insurance company was always compensated for all expenses on their insured persons, it would not have any motivation to reduce the costs of treatment and look for more effective solutions, because they would not bring in any profit. The Dutch redistribution model uses the ex-post mechanism only for a part of fixed expenses of healthcare facilities and only redistributes approximately 0.9% of total healthcare resources by means of this mechanism. According to consulting company Gupta, this mechanism should only be implemented in three specific cases: in order to reduce the risk for an HIC; if an HIC cannot influence treatment costs; if an HIC is in transitional period when the insurance portfolio is changing considerably by its extension.

*Source: Institute of Health Policies*

**Slovakia uses a risk equalisation mechanism inspired by the Dutch model and is currently able to predict “only” 24% of average expenses. This is the case of foreign models as well and it does not have to mean that the redistribution is bad from the systemic point of view.** The model is still partially responsible for an imperfect redistribution of resources among health insurance companies. A model used until 2018 using only demographic and PCG indexes<sup>164</sup> could only predict 18%, which was increased by the addition of MAC indices<sup>165</sup> (indices are explained in the box). As a result, the redistribution mechanism assigns too high or too low a rate to the majority of insured persons – but if these deviations in under- and overcompensated insured persons are not systematically different among HIC, the sum of deviations for each HIC will be close to zero if the number of

<sup>164</sup> At the moment, 72 combinations of demographic features are used. Legislation can change; most recently a group of children aged 0 – 4 was divided into two groups, children aged 0 and 1 – 4, because newborns have considerably higher expenses than older children.

<sup>165</sup> The current model works with 27 PCG groups of chronic diseases stated in the valid legislation, which may change. Each HIC has the right to propose changes in ATC and PCG groups and corresponding diagnoses, such as exclusion or addition, by June 30 in order to be included in the recalculation for the following year (e.g. by June 30, 2017 in order to be included in the recalculation for 2018). The precise calculation process is found in the Annexes.

insured persons is high enough. A problem would arise if the redistribution mechanism was wrong in the long term and one of the health insurance companies received more negative deviations than positive ones.

**According to the Institute of Health Policies at the Ministry of Health (IoHP or IZP<sup>166</sup>), the current model results in approximately 700,000 insured persons who are under- or overcompensated by more than 1,000 euros after the redistribution.** Table 47 shows that the number of imperfectly compensated insured persons decreased when MACI indices were added to the model.

**Table 47: Imperfectly compensated patients**

	Model with demography and PCG	Model also with MACI
Total under- and overcompensation	1.9 billion euros	1.7 billion euros
Number of undercompensated patients	1.2 million	-
Number of overcompensated patients	4 million	-
Number of undercompensated by more than 1,000 euros	0.4 million	0.36 million
Number of overcompensated by more than 1,000 euros	0.5 million	0.35 million

*Source: Institute of Health Policies*

**The model is still partially responsible for an imperfect redistribution of resources among health insurance companies.** The Institute of Health Policies analysed the effectiveness of the model in redistribution among HIC by comparing the differences between revenues and expenses. Table 48 shows that according to the original model, VŠZP spends almost 73 million euros more on healthcare than it receives from the redistribution mechanism, but Dôvera and Union receive more. Part of this difference is explained by an imperfect redistribution mechanism since the differences among HIC were reduced after adding other indices to the model.

**Table 48: Compensation of HIC (year)**

difference between revenues and expenses, in million euros*	Model with demography and PCG	Model also with MACI
VŠZP	-73	-33
Dôvera	51	18
Union	22	14

\*the sum of all cashflows is zero because of the assumption that total revenues equal total expenses in the given year – the numbers thus do not correspond to actual cashflows in the given year.

*Source:  
Institute of  
Health  
Policies*

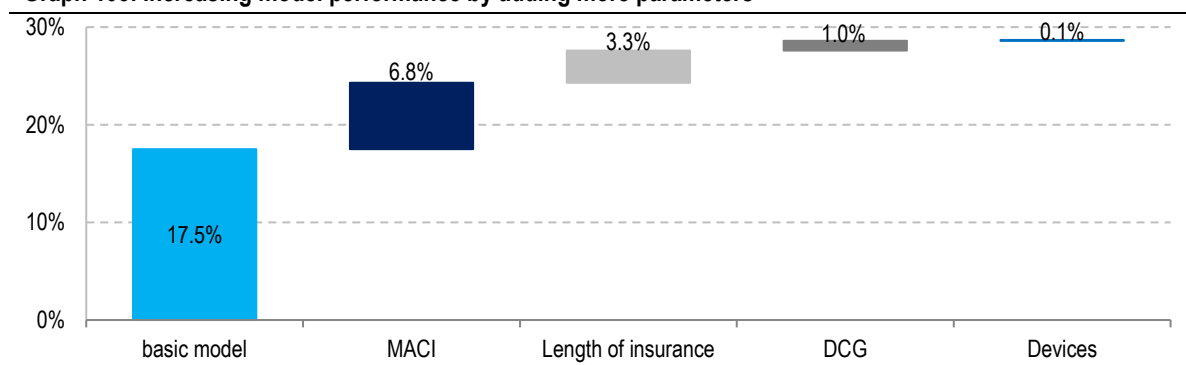
**Adding more parameters can increase precision of the Slovak model and thus reduce under- and overcompensation of insured persons.** According to IoHP, other indices are to be added in the Slovak model besides MACI, i.e. indices of medical device use, DCG and adjustment by length of insurance.<sup>167</sup> Graph 103 shows how the new parameters will enhance the prediction power of the model, which will increase payments for the undercompensated and decrease payments for overcompensated insured persons to a various extent (see Annexes).

<sup>166</sup> Inštitút zdravotnej politiky

<sup>167</sup> According to legislation, a variable can be added to the model only if the coefficient of determination R<sup>2</sup> increases by 0.01 (i.e. the model explains further 1% of the variation).



**Graph 103: Increasing model performance by adding more parameters**



Source: Institute of Health Policies

On the other hand, it is true that part of the differences in losses and profits can be explained by the ability of the HIC to manage their funds efficiently. An efficiency analysis of VŠZP from 2018 identified a large room for improvement in this area.

At the moment, resources in Slovakia are not redistributed ex-post. A variation of ex-post redistribution was used in Slovakia in 2017 (so-called compensation of over-the-limit procedures), 160 million euros were redistributed among health insurance companies. The mechanism defined a limit<sup>168</sup> and payments over the limit represented the difference between actual payments and the limit. Subsequently, 80% of over-the-limit payments for all insured persons were added up and this sum was evenly distributed among all HIC. Therefore, an HIC paid direct expenses for a very costly insured person only up to the defined limit plus 20 per cent of the over-the-limit payment; on the other hand, it paid further third of the expenses indirectly.

Ex-post redistribution is not used at the moment, therefore, health insurance companies can be “wrongfully” unprofitable to some extent. This can be corrected by an assessment of justification of individual cases. Ex-post redistribution is not used anymore because of the risk that HIC would not be willing to efficiently manage costly insured persons if they were fully compensated for them (for more information about the risk, see the box). One option would be to establish an independent review committee for all three health insurance companies to decide whether the treatment expenses for a small number of costly patients not taken into account by the ex-ante model are justified. Therefore, the HIC would not be unprofitable and would still have the motivation to treat the patient effectively.

<sup>168</sup> The over-the-limit payment mechanism from 2017 defined the “limit” as the sum of compensation given via the redistribution mechanism and 20-multiple of average expenses per insured person in 2017.

## Annexe 4: Operational expenditure of hospitals

### Electricity

**A more advantageous electricity procurement can save 262 thousand euros.** Unit prices<sup>169</sup> in university and teaching hospitals valid in 2018 varied from 33.9 to 50.1 euros per MWh. Contractual prices differed from the market value<sup>170</sup> on PXE by 27% on average. The savings are calculated in comparison to a reference price which differs from the market price at maximum by the average deviation.

**Table 49: Calculation of savings in power supply**

	UN BA	UN KE	FN BB	UN MA	FN PO	FN ZA	FN TN	FN NR	FN TT	FN NZ	DF BA	DF KE	DF BB
contractual unit price 2018 (EUR/MWh)	33.86	46.87	39.94	48.25	-	40.9	48.25	39.66	43.68	50.08	-	49.15	-
actual expenditure 2018 (thousand euros)	1,447	1,815	1,616	572	-	491	394	370	463	476	482	117	108
expenditure with reference price (thousand euros)	1,883	1,706	1,783	522	-	529	360	411	468	419	-	105	-
<b>potential savings (thousand euros)</b>	-	<b>108.6</b>	-	<b>49.6</b>	-	-	<b>34.2</b>	-	-	<b>57.2</b>	-	<b>12.1</b>	-

Source: University and teaching hospitals' contracts and financial statements, PXE

### Gas

**By reducing unit price variability of gas supply and concluding contracts for a standard period of time (1 to 2 years), it is possible to save 401 thousand euros.** Like with power supply, the savings have been calculated by comparing commodity price on PXE stock exchange. The highest price and the highest potential savings identified in University Hospital in Košice (UN KE) were due to an unfavourable short-term amendment to a contract.

**Table 50: Calculation of savings in gas supply**

	UN BA	UN KE	FN BB	UN MA	FN PO	FN ZA	FN TN	FN NR	FN TT	FN NZ	DF BA <sup>171</sup>	DF KE	DF BB
contractual unit price 2018 (EUR/MWh)	21.24	32.42	23.47	24.47	-	-	21.8	19.33	22.10	-	-	-	17.55
actual expenditure 2018 (thousand euros)	1,747	1,154	1,841	93	-	-	413	423	20	-	290	-	48
expenditure with reference price (thousand euros)	1,875	812	1,789	86	-	-	432	499	20	-	-	-	63
<b>potential savings (thousand euros)</b>	-	<b>342.4</b>	<b>52.7</b>	<b>6.3</b>	-	-	-	-	-	-	-	-	-

Source: University and teaching hospitals' contracts and financial statements, PXE

<sup>169</sup> The calculation is based on unit prices for power supply without distribution fees, taxes and other fees.

<sup>170</sup> Average price in the period from January to November 2017 was 34.8 euros/MWh – the analysed period for power supply for 2018 under the assumption that electricity is also supplied in December 2017.

<sup>171</sup> Contract parameters were not provided for analysis.

## Cleaning

**By unifying prices for cleaning services to the second<sup>172</sup> lowest price in university and teaching hospitals, it is possible to save 4.2 million euros.** Unit prices of cleaning services among some of the hospitals were double compared to others. Different contract terms were present even for the same provider. Based on the available data on university and teaching hospitals' contracts, the analysis did not distinguish administrative and medical premises.

**Table 51: Calculation of savings in cleaning services**

	UN BA	UN KE	FN BB	UN MA	FN PO	FN ZA	FN TN	FN NR	FN TT	FN NZ	DF BA	DF KE	DF BB
contractual unit price 2018 (EUR/m2/year)	21.41	12.80	-	-	22.75	-	15.20	17.35	-	10.15	12.30	2.53	-
actual expenditure 2018 (thousand euros)	4,296	1,713	-	-	1,677	-	625	890	-	449	670	2.6	-
expenditure with reference price (thousand euros)	2,037.1	1,358.4	-	-	748.5	-	417.6	520.6	-	448.7	552.9	-	-
<b>potential savings (thousand euros)</b>	<b>2,258.7</b>	<b>354.9</b>	-	-	<b>928.7</b>	-	<b>207.6</b>	<b>369.4</b>	-	<b>0.0</b>	<b>117.1</b>	-	-

Source: University and teaching hospitals' contracts and financial statements

## Washing

**By procuring washing services for the lowest identified unit price, it is possible to save 412 thousand euros.** Savings could not be determined for Teaching Hospital in Nitra (FN NR) which did not have a contractual relationship with a washing services provider in 2018 and ordered them as necessary. Such an approach is inefficient – FN NR had the highest expenses on washing among all university and teaching hospitals, even though it is considered average or smaller in size. In comparison, the largest hospital, University Hospital Bratislava (UN BA) with almost three times the number of admitted cases, spent 7% less resources on washing in 2018 than FN NR.

As many as 4 out of 8 compared hospitals were using washing services from the same provider (LAVATON s.r.o.). Unit prices for these hospitals varied from 0.51 to 0.75 EUR/kg. Rough analysis suggests the relationship between contractual volumes and price. This fact supports the idea of central procurement of services for all university and teaching hospitals via URPO in order to save resources on a larger scale.

<sup>172</sup> The lowest unit price (2.5 EUR/m2/year) is paid by Children's Teaching Hospital in Košice (DF KE) for cleaning of common areas. The service is part of their rental agreement with the University Hospital in Košice (UN KE). This price is atypical by the amount and the services covered, which is why the second lowest price was used for calculation.

**Table 52: Calculation of savings in washing services**

	UN BA	UN KE	FN BB	UN MA	FN PO	FN ZA	FN TN	FN NR	FN TT	FN NZ	DF BA	DF KE	DF BB
contractual unit price 2018 (EUR/kg)	0.51	-	0.44	0.65	0.60	-	0.65	on demand	0.58	-	0.54	0.75	-
actual expenditure 2018 (thousand euros)	534.9	-	112.7	371.7	248.4	-	285.4	572.8	181.1	2.9	84.4	42.5	-
expenditure with reference price (thousand euros)	468.9	-	112.7	254.5	184.2	-	195.4	-	139.5	-	69.0	25.2	-
<b>potential savings (thousand euros)</b>	<b>66.0</b>	<b>-</b>	<b>0.0</b>	<b>117.2</b>	<b>64.2</b>	<b>-</b>	<b>90.0</b>	<b>-</b>	<b>41.7</b>	<b>-</b>	<b>15.4</b>	<b>17.3</b>	<b>-</b>

Source: University and teaching hospitals' contracts and financial statements

## Catering

**Savings potential of catering services procurement for patients and their companions in university and teaching hospitals is 759 thousand euros.** The calculated savings only concern 5 of 13 hospitals – the other hospitals provide catering themselves. More than 500,000 euros can be saved by lowering unit prices in Teaching Hospital in Banská Bystrica (FN BB).

As many as 3 out of 5 hospitals (FN BB, FN TN, FN TT) procure catering services for patients based on 10-year concession contracts. The price for full board in these hospitals varies from 6.94 to 9.02 euros per day. Another particularity of catering services in university and teaching hospitals is frequent use of services of one provider and intertwined proprietary relations in catering service companies in 4 out of 5 compared hospitals.

**Table 53: Calculation of savings in catering services**

	UN BA	UN KE	FN BB	UN MA	FN PO	FN ZA	FN TN	FN NR	FN TT	FN NZ	DF BA	DF KE	DF BB
contractual unit price <sup>173</sup> 2018 (full board/€)	-	-	9.02	-	-	-	6.94	-	7.95	-	-	7.36	6.89
actual expenditure 2018 (thousand euros)	-	-	2,256.8	-	-	-	1,770.0	-	1,545.9	-	-	164.1	115.3
expenditure with reference price (thousand euros)	-	-	1,724.9	-	-	-	1,758.6	-	1,340.3	-	-	153.8	115.3
<b>potential savings (thousand euros)</b>	<b>-</b>	<b>-</b>	<b>531.9</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>11.4</b>	<b>-</b>	<b>205.7</b>	<b>-</b>	<b>-</b>	<b>10.4</b>	<b>0.0</b>

Source: University and teaching hospitals' contracts and financial statements

<sup>173</sup> If several rates for different types of board existed, unit prices were calculated as their weighted mean.

## Security service

**University and teaching hospitals can save 51 thousand euros on property protection provided by security service employees.** The analysis has assessed unit prices per man-hour of security service. It has not evaluated other forms of security systems which are currently used by 3 of the monitored hospitals. Security service was provided internally by 4 hospitals.

**Table 54: Calculation of savings in security services provided by employees**

	UN BA	UN KE	FN BB	UN MA	FN PO	FN ZA	FN TN	FN NR	FN TT	FN NZ	DF BA	DF KE	DF BB
contractual unit price 2018 (EUR/kg)	4.46	6.04	-	-	3.37 <sup>174</sup>	-	6.54	4.22	-	-	4.07	-	-
actual expenditure 2018 (thousand euros)	115.9	16.7	-	-	245.2	-	86.1	66.6	-	-	114.8	-	-
expenditure with reference price (thousand euros)	105.6	11.2	-	-	295.8	-	53.5	64.1	-	-	114.8	-	-
potential savings (thousand euros)	10.4	5.5	-	-	-	-	32.6	2.5	-	-	0.0	-	-

Source: University and teaching hospitals' contracts and financial statements

## Legal services

**Monthly expenses on legal services provided by solicitors' offices to university and teaching hospitals differ considerably.** The analysis has compared only contractual monthly fees for legal services, not remuneration for representation in lawsuits. Based on the parameters of the available contracts and the amount of detail in the accounting of the university and teaching hospitals, it was not possible to calculate the savings. The analysis still mentions monthly fees paid by hospitals for comparison (Table 55). The highest monthly fee for legal services is paid by Teaching Hospital in Prešov (FN PO), which is 10 times higher than the fee in University Hospital in Martin (UN MT). Setting unified rules for the choice of legal services in university and teaching hospitals would increase transparency and the possibility of checks.

**Table 55: Calculation of savings in legal services**

	UN BA	UN KE	FN BB	UN MA	FN PO	FN ZA	FN TN	FN NR	FN TT	FN NZ	DF BA	DF KE	DF BB
Contractual fee 2018 (EUR/month)	-	1,650	1,100	600	6,741	-	2,191	1,600	600	-	1,660	-	1,000
Difference from the lowest value	-	175%	83%	0%	1,023%	-	265%	167%	0%	-	177%	-	67%

Source: University and teaching hospitals' contracts

<sup>174</sup> Teaching Hospital in Prešov (FN PO) did not deliver complete data for the entire monitored period for the analysis. The stated price thus cannot be considered a reference price.

## Annexe 5: An example of incorrectly created payment group (U106)

A new payment group U106 was created on July 1, 2019. It had a considerably worse impact on PHI and on competitive environment than if the change had not taken place (table 56). The patient was not better off.

From October 1, 2019, there should be a change of payment in the group (table 57). The group will remain problematic; however, not for PHI, but for the patient.

**Table 56: Payment group U106 from July 1, 2019, to September 30, 2019, with a negative impact on PHI with no added value.**

Code	Name	Package and strength	Final price	Reimbursement until 06/2019	OOP until 06/2019	Reimbursement 07/2019 – 09/2019	OOP 07/2019 – 09/2019	consumption in 2018 (pcs)	Yearly impact on PHI
5290B	URSOMED 250 mg	100x250 mg	23.42	23.42	0.00	23.42	0.00	25,276	- €
91017	Ursofalk 250 mg	100x250 mg	26.09	23.43	2.66	26.09	0.00	26,459	-70,381€
95094	URSOSAN	100x250 mg	27.47	23.43	4.04	26.10	1.37	100,011	-267,030€
97864	URSOSAN	50x250 mg	16.25	11.72	4.53	13.05	3.20	2,401	-3,193€
5292B	URSOMED 500 mg	100x500 mg	39.95	39.95	0.00	39.95	0.00	16,438	- €

Note: The pharmaceuticals are indicated to treat digestive problems. They use ursodeoxycholic acid as the active substance

Source: monthly categorisation lists of pharmaceuticals, NHIC L02 reports, type R and LA

### Explanation of Table 56:

Since July 2019, reimbursements have been determined differently for pharmaceuticals with strength of 250 mg and 500 mg. The patient could buy the pharmaceuticals with both strengths without an OOP (Ursomed 250 mg and Ursomed 500 mg). Health insurance companies were right to only reimburse the pharmaceuticals up to the price of the cheapest one with the given strength; if a patient wanted a more expensive medicament even if it was not necessary, they had to pay more out of their pocket.

By including both strengths in one payment group, the reimbursements were recalculated per unit of strength based on the cheapest medicament – Ursomed 500 mg. For example, since July, health insurance companies should only reimburse 19.98 euros for a 100 pcs package with a strength of 250 mg and the rest would be an out-of-pocket payment. In order to avoid increasing the OOP for all 250 mg pharmaceuticals, the MoH has determined the reimbursement based on the third lowest unit price in the group. Health insurance companies thus must reimburse 250 mg pharmaceuticals up to 26.10 euros, even though the cheapest of them only costs 23.42 euros.

The patient is not better off – even before the change, they had a medicament with either of the strengths without an out-of-pocket payment. On the other hand, the change has helped the pharmaceuticals Ursofalk 100x250 mg and Ursosan 100x250 mg considerably. They can now successfully prevail over cheaper pharmaceuticals of competing producers. The reason why this group has been created is unknown.

**Table 57: Planned change of payment group U106 from October 1, 2019**

Code	Name	Package and strength	Final price	Reimbursement until 06/2019	OOP until 06/2019	Reimbursement until 10/2019	OOP until 10/2019	consumption in 2018 (pcs)	Yearly impact on PHI
5290B	URSOMED 250 mg	100x250 mg	23.42	23.42	0.00	19.97	3.45	25,276	87,202 €
91017	Ursofalk 250 mg	100x250 mg	26.09	23.43	2.66	19.97	6.12	26,459	161,929 €
95094	URSOSAN	100x250 mg	27.47	23.43	4.04	19.97	7.50	100,011	750,083 €
97864	URSOSAN	50x250 mg	16.25	11.72	4.53	9.98	6.27	2,401	15,054 €
5292B	URSOMED 500 mg	100x500 mg	39.95	39.95	0.00	39.95	0.00	16,438	- €

Note: The pharmaceuticals are indicated to treat digestive problems.

Source: monthly categorisation lists of pharmaceuticals, NHIC L02 reports, type R and LA

### Explanation of Table 57:

In comparison to the previous table, since October, the reimbursement has not been determined based on the third cheapest price per DDD but on the cheapest one (i.e. based on the medicament Ursomed 500 mg). Including pharmaceuticals with strengths of both 250 mg and 500 mg will bring in savings of 1 million euros to PHI compared to June, however, the total savings will be paid by the patient. The 500 mg medicament cannot be halved. Patients with the most frequent indication weighing 61 – 80 kg use 750 mg per day, those weighing over 100 kg use 1,250 mg. Patients thus need to use also 250 mg packages, therefore, they cannot avoid the higher OOP.

## Annexe 6: Change of the original proposal of definition of pharmaceuticals for rare diseases

During the legislative process, there has been a change of planned definition of pharmaceuticals for rare diseases, which has had significant impacts on PHI expenses.

Original legislative proposal submitted to intersectoral consultation procedure: According to Article I § 7(2)(a)(3): (a medicament can be included in the system of categorised pharmaceuticals if it satisfies the condition of cost-effectiveness or...) “is indicated to treat a disease whose **prevalence**<sup>175</sup> in the Slovak Republic is lower than 1:50,000,…” This wording was proposed in several instances in the law.

Proposal discussed by the National Council of the SR after consultation: (During the consultation, a comment by the Slovak Medical Association was accepted) The word “**prevalence**” was replaced in all instances by the wording: “...is intended to treat a disease if **the number of patients suitable to be treated by the medicament according to the registered indication and proposed indication restriction** in the Slovak Republic is lower than 1:50,000,…”

Change after meeting of the Health Committee: the words “and proposed indication restriction” were left out of the wording. The final wording: “...is intended to treat a disease if **the number of patients suitable to be treated by the medicament according to the registered indication**<sup>176</sup> in the Slovak Republic is lower than 1:50,000,…” The same change was used in 4 other relevant instances in the law and the law was approved as such.

**It is more difficult to satisfy the condition of disease prevalence than the condition of registered indication since an indication can be defined as a subset of disease** (patients can suffer from a non-rare disease with rare complications). The accepted comment from the Slovak Medical Association during consultation process thus considerably increased the number of pharmaceuticals which can enter the LCP without proof of cost-effectiveness.

### **Explanation of the definitions on the example of a medicament with yearly impact of 2.2 million euros:**

*Duodopa intestinal gel* is a medicament indicated to treat Parkinson’s disease. The medicament is not indicated to treat all patients with Parkinson’s disease, only for one specific indication of this disease. The indication in this case is: “*treatment of advanced, levodopa-responsive Parkinson’s disease with severe motor fluctuations and hyperkinesia or dyskinesia, if a treatment by an available combination of antiparkinsonian pharmaceuticals has not been successful.*”<sup>177</sup> The number of patients suitable for such a narrowly defined indication is small enough and the medicament fulfilled the conditions of categorisation according to the valid legislation in 2018 when the application was submitted.

The prevalence of Parkinson’s disease in Slovakia is estimated at 140 cases / 50,000 citizens<sup>178</sup>, i.e. approximately 1:360. The medicament thus does not satisfy the currently valid condition of disease prevalence, nor did it prove its cost-effectiveness at the time of categorisation. It is an example of a medicament which should stop being reimbursed from PHI without a clear cost-benefit analysis. The yearly impact of its conditioned inclusion in the categorisation is estimated at 2.2 million euros.

<sup>175</sup> Occurrence in population

<sup>176</sup> Adding an indication restriction as suggested during consultation would only further extend the exception. Indication restriction is used to define a group of patients whose treatment will be reimbursed (such as those who have undergone another type of treatment without success). For example, even if a medicament did not achieve the defined rarity via registered indication, it could satisfy the condition when taking into account the indication restriction. From this point of view, the change in the parliament has partially narrowed the group of pharmaceuticals which would have been extended if the comment was included. Therefore, the wording of the law approved by the parliament has approached the original intention but still remained much more benevolent.

<sup>177</sup> Source: Duodopa intestinal gel. Basic information. Available at [mediately.co/sk](http://mediately.co/sk), translated into English

<sup>178</sup> Source: P. Valkovič in the article „Dnes už vieme udržať Parkinsonovu chorobu na uzde.“ Available at [www.modernamedicina.sk/liecba-a-terapia/dnes-uz-vieme-udrzat-parkinsonovu-chorobu-na-uzde](http://www.modernamedicina.sk/liecba-a-terapia/dnes-uz-vieme-udrzat-parkinsonovu-chorobu-na-uzde)



## Annexe 7: Remuneration mechanisms

Hospitals in OECD countries are funded via four basic types of remuneration mechanisms.

1. **Payment per case**
  - a. Payment per diagnosis (DRG, diagnosis-related groups)
  - b. Payment for completed hospital stay
2. **Fee-for-service (FFS)**
3. **Payment per diem**
4. **Prospective (global) budget**

The characteristics, advantages and disadvantages of the mechanisms are summarised in the box.

**Slovakia most frequently uses payments for completed hospital stay (inpatient care) to finance inpatient healthcare (point 1b).** Health insurance companies negotiate the amounts directly and individually with the providers, i.e. hospitals. Therefore, one HIC can pay different sums to different hospitals for a completed hospital stay within the same specialty. Payments for completed hospital stays do not include laboratory and imaging procedures and some expensive types of medical material. A less frequent type of payment nowadays is payment per diem (point 3). It is used in case of long-term hospital stays at internal medicine ward or psychiatry ward.

**Besides inpatient care, hospitals in Slovakia provide also other types of HC, such as specialised outpatient care (SOC) and common examination and treatment units (CETU). Different remuneration mechanisms are used in these types of HC, mainly fee-for-service (point 2).** The amounts paid for specific procedures are negotiated by the HIC directly with providers; they determine a so-called unit price per procedure point (each procedure has different number of points depending on complexity and costs). The MoH SR issues an auxiliary list of procedures along with their evaluation in points. Its use in negotiations between an HIC and a provider is voluntary. Fee-for-service is used also in one-day surgery and short-term hospital stay (up to 72 hours).

**Remuneration mechanisms currently used in the Slovak system have various disadvantages** (Table 58). Payment for completed hospital stay may motivate providers to keep the length of stay as short as possible, payment per diem can motivate them to keep it unreasonably long. Lump fee-for-service can lead to provision of as many procedures as possible, often redundant ones, as well as to preferring certain procedures with a higher payment over cheaper ones. This is why health insurance companies have established measures for the providers in the form of financial limits, volume limits of provided procedures, approval of planned hospital stays etc. However, these are not complex solutions.

**Some health insurance companies have started using prospective global budget (point 4) in the recent years to fund hospitals in Slovakia.** It involves a fixed, usually monthly payment which covers a pre-determined volume of HC regardless of the actual volume of HC provided by the hospital in the given period. It has been used abroad in various forms, for example in Belgium, Denmark, Italy, Luxembourg.

**The majority of remuneration mechanisms used in hospital funding in Slovakia nowadays should be completely replaced by the DRG system in the future.**

## Box 18: Remuneration mechanisms in healthcare

OECD<sup>179</sup> distinguishes so-called traditional and innovative remuneration mechanisms.

**Traditional mechanisms** involve the aforementioned global budget, fee-for-service, payment per case (DRG) and payment per diem. It also includes so-called capitation, used in general outpatient care also in Slovakia, but this type is not analysed further in this chapter because GOC represents only a small proportion of hospital revenues.

**Table 58: Advantages and disadvantages of traditional remuneration mechanisms**

Remuneration mechanism	Providers	Advantages	Disadvantages
<b>Fee-for-service (FFS)</b>	general practitioners and specialists	transparent reporting, accessibility of HC, transparency	excessive number of procedures, no cost control (disadvantage for resource managers)
<b>DRG</b>	hospitals	allows to compare hospitals based on their effectiveness in HC provision, shortens average length of stay	more complicated reporting, earlier discharge with the risk that the patient is not yet healthy
<b>Payment per diem</b>	hospitals	simple reporting	encourages excessively long hospital stays, no cost control (disadvantage for resource managers)
<b>Capitation</b>	general practitioners	relatively simple reporting, flexibility for the provider, cost control (advantage for resource managers)	motivates to pick “easier cases” whose treatment is less expensive, which translates into lower accessibility of HC
<b>Global budget</b>	hospitals	flexibility for the provider, (advantage for resource managers)	hospitals have a tendency to reduce their expenses, which can lead to lower quality of HC; increased patient selection

**Innovative mechanisms** are created as a response to the drawbacks of traditional mechanisms. They can be divided into three groups:

- 1) **“Add-on payments”** – preliminary or additional payments beyond the existing main payment method. One example is the so-called **pay-for-performance (P4P)**. P4P is an additional payment bound to quality indicators of the provided HC. It is used in many developed countries in:

<sup>179</sup> OECD (2016), Better Ways to Pay for Health Care, OECD Health Policy Studies, OECD Publishing, Paris, <https://doi.org/10.1787/9789264258211-en>.

- **primary HC** – this is where the P4P mechanism is used most often. The participation of providers in the schema can be voluntary (AUS, FR, NZ, US, UK) or mandatory (TUR, CL). In the majority of cases, the payment is bound to absolute or relative endpoints in preventive care, chronic disease management, sometimes also to patient satisfaction (NZ, SWE). Unlike inpatient care, it is relatively easy to bind pay-for-performance directly to a specific physician in primary HC, which is why, in most cases, P4P functions individually.
- **specialists** – like in primary HC, the participation of providers can be voluntary (FR, US) or mandatory (ES, JAP). The payment is usually bound to chronic disease treatment or preventive care.
- **inpatient HC** – P4P is used less in this type of healthcare. Clinical results and patient experience are evaluated.

**The P4P mechanism is a relatively new tool and it is used mainly as an addition to existing remuneration mechanisms, which makes it hard to isolate its final impact on HC quality.** P4P is usually part of a more extensive reform of health system in the given country, such as the creation of Family Health Units in Portugal, where P4P is partially used to evaluate healthcare staff. Only the implementation of P4P itself creates the assumption of several beneficial systemic changes. They include, for example, clear targets for providers, creation of measurable quality indicators of healthcare and more transparent dialogue between providers and resource managers. It also requires a consistent methodology of data collection and interpretation across HC entities.

**Besides P4P, add-on payments include also “pay-for-coordination”.** It is a preliminary payment received by a HC provider (most often it is redistributed among general practitioners and specialists) for their participation in the treatment of a patient with a chronic disease. It is used e.g. in France to treat diabetes and in Germany to treat cardiovascular diseases.

- 2) **“Bundled payments for episodes of care”** – used in inpatient care. The mechanism is based on DRG. However, in this case, one payment covers an entire “episode of care” which includes physician evaluation, eventually post-op care, follow-up with a specialist, etc. This mechanism is very complicated from an administrative point of view and requires strict coordination of data collection. In Sweden, this system is used in some interventions (hip replacement, spine surgeries – pre/post-op care) or chronic diseases (diabetes). In the Netherlands, bundles are used in some chronic diseases (diabetes, cardiovascular diseases). The bundle is managed by a group of providers responsible for a patient with the diagnosis.
- 3) **“Population-based payments”** – groups of providers are evaluated based on the population they cover. In the USA, this meant the creation of ACOs (Accountable Care Organisations) – groups of providers covering a certain region who can differ in their exposure to risk. Some ACOs share only their profits, others both profits and losses. A similar system is also used on a regional level, mainly in rural areas in Germany or Spain.

*Source: OECD (2016)*

### Box 19: Definition of disease prevention and health promotion

#### 1. Disease prevention

Primary prevention includes

- Vaccination and preventive health measures (such as routine check-ups) for children, adults and the elderly
- Providing information about risks related to the behaviour and health of people and measures to decrease the risks on individual and population level
- Integration of disease prevention programmes in primary and specialist HC
- Education in dental hygiene

Secondary prevention includes

- Population screening programmes focused on early detection of diseases
- Mother and child health programmes including screening and prevention of congenital malformations
- Administration of chemoprophylactic substances (substances administered preventively) to keep risk factors in check (e.g. antibiotics for patients with autoimmune diseases to prevent infections)

#### 2. Health promotion

- Policies and interventions focused on tobacco and alcohol consumption, physical activity and diet
- Intervention in malnutrition, which is defined as a state when consumed food lacks some nutrients, there is an excess of some nutrients (too high intake) or they are imbalanced
- Intersectoral policies and interventions of healthcare services focused on mental health and substance abuse (Chapter 16)
- Strategies to promote sexual and reproductive health also via health education, increased access to sexual and reproductive health and birth control services.
- Strategies to fight domestic violence, including public awareness campaigns; victim management and protection; interconnection with law enforcement authorities and social services.

#### 3. Support mechanisms for health promotion and disease prevention

- Intersectoral partnerships for health promotion and disease prevention
- Educational and social communication skills focused on the promotion of healthy living conditions, lifestyle, behaviour and environment, but also e.g. road safety
- Measures focused on socio-economic factors, mainly education and early-childhood programmes
- Redirection of health services to care models which support disease prevention and health promotion
- Monitoring and information about risk factors of public health

Source: WHO, OECD

**Box 20: Expenses on prevention in the OECD database**

OECD countries report their healthcare expenses in prescribed categories according to SHA methodology. The expenses on prevention are divided into six categories:

1. Awareness and education programmes
2. Vaccination programmes
3. Early detection programmes, screenings
4. Health condition monitoring
5. Epidemiology research
6. Preparation for a state of emergency

Slovakia only reports public expenses in the first category.

## Annexe 9. Shortage of nurses – comparison to OECD countries

In the OECD database, the data for Slovak nurses are only present in one of the nine categories: *Professionally active nurses*, i.e. nurses working with patients, but also in administration or research. A simple comparison to OECD countries average in this category (9.95 nurses per one thousand citizens in 2016) shows that in 2016, Slovakia had 5.75 nurses per 1,000 citizens and thus lacked as many as 22,864 nurses. This number is inaccurate. The reported number of nurses in Slovakia belongs to a narrower category of nurses in healthcare – *Practising nurses*, which includes *Professional nurses, Practising* (equivalent to the definition of nurse in Slovakia) and *Associate nurses, Practising* (equivalent to the definition of nurse’s aide in Slovakia). In 2016, the category *Practising nurses* included 33,828 Slovak healthcare professionals, of which 30,892 nurses and 2,846 nurse’s aides.

A simple comparison with the average of 25 OECD countries in the category *Practising nurses* shows that 18,174 nurses lack in Slovakia. The table below summarises problems which can make the comparison with Slovakia in this category more complicated. VfM Division has adjusted some numbers according to the original or other sources of national data, kept the information for others, and in the end excluded 10 countries.

The demand for nurses in individual countries can be influenced significantly by the proportion of elderly citizens – the more elderly people who need more acute and long-term care, the more nurses a country needs. The population of every country was divided into six age groups: 0-1, 1-49, 50-59, 60-69, 70-79 and over 80. Average indices for the six age groups were calculated based on the data about cost risk indices per individual age groups in Slovakia (the indices are used for health insurance risk equalisation mechanism<sup>180</sup>). Final healthcare need coefficients represent a ratio of the average in each category and the average in the reference category 1-49 with the lowest expenses, which has the coefficient 1. For example, the coefficient for the most costly group 0-1 is 4.85. It means that HC in this category is 4.85 times more expensive than in the category 1-49.

In the next step, the population of each country was divided into the given six age groups and the number of citizens in each was multiplied by the relevant coefficient. The final population will increase considerably for countries with a large proportion of citizens aged 0 to 1 year and over 60 years. Such an adjusted number of Slovak nurses stands for 3.82 nurses per 1,000 citizens and the average in compared countries is 5.39 nurses per 1,000 citizens. **Considering the age structure, the result gives a shortage of 13,874 nurses.**

**Table 59: Number of Practising nurses in OECD countries, issues with data and solutions**

Country	Number in OECD	Possible issues	VfM solution	Recalculated by VfM
Australia	11.64	Data include not only nurses, but also midwives. Some have a double specialty “nurse and midwife”. OECD reports an estimated number.	The numbers were recalculated by bottom-up approach based on Australian government’s report: <a href="https://www.aihw.gov.au/reports/workforce/nursing-and-midwifery-workforce-2015/contents/who-are-nurses-and-midwives">https://www.aihw.gov.au/reports/workforce/nursing-and-midwifery-workforce-2015/contents/who-are-nurses-and-midwives</a> . Midwives were excluded based on the headcount to FTE ratio. The result is a little lower than reported in OECD.	11.26

<sup>180</sup> Regulation No. 403/2018 Coll.

<b>Austria</b>	7.99	Data only include nurses in hospitals.	Exclude from the comparison.	x
<b>Belgium</b>	11.13	-	-	11.13
<b>Canada</b>	9.91	-	-	9.91
<b>Czech Republic</b>	8.07	There is a risk that nurses who work simultaneously in two facilities are counted twice.	The number of nurses was recalculated with FTE from 2013, which should remove the double reporting. Nurse's aides were counted as well since they got new competences and became practising nurses. <a href="https://www.uzis.cz/rychle-informace/pracovnici-ve-zdravotnictvi-31-12-2013">https://www.uzis.cz/rychle-informace/pracovnici-ve-zdravotnictvi-31-12-2013</a>	7.8
<b>Denmark</b>	16.90	The number includes also nurses on maternity leave or sick leave.	The number of nurses was decreased by 10% – an estimate of the number of nurses on maternity leave (5% birth rate for women aged 20-49, entitlement to 52 weeks of leave) and other long-term leaves and incapacity.	15.21
<b>Estonia</b>	6.10	-	-	6.1
<b>Finland</b>	14.47*	Data unavailable since 2015.	-	14.47
<b>France</b>	10.19*	Data also include nurses working in administration, education or research.	The number was decreased based on the average proportion of nurses in non-medical jobs from other countries.	9.5
<b>Germany</b>	12.85	-	-	12.85
<b>Greece</b>	3.25	Data only include nurses in hospitals.	Exclude from the comparison.	x
<b>Hungary</b>	6.44	-	-	6.44
<b>Iceland</b>	14.22	-	-	14.22
<b>Ireland</b>	11.61*	Data also include midwives and it is impossible to exclude them from the number of nurses.	Exclude from the comparison.	x
<b>Israel</b>	4.99	Problem with data variability between years. The data is based on Labour Force Survey with a small sample of nurses. The outcomes are further extrapolated.	Exclude from the comparison.	x
<b>Italy</b>	5.57	-	-	5.57
<b>Japan</b>	11.34	Data also include nurses and nurse's aides in long-term care.	It is unsuitable to exclude nurses working in long-term care. According to NHIC reports, more than 2,000 FTE work in long-term care, of which 674 in outpatient care. Moreover, it is in the interest of the Slovak healthcare to also count nurses in long-term care, eventually increase their numbers.	11.34
<b>South Korea</b>	6.80	-	-	6.8
<b>Latvia</b>	4.64	-	-	4.64

<b>Lithuania</b>	7.70	Missing description in OECD	-	7.7
<b>Luxembourg</b>	11.72	Data might include midwives and pharmacists.	Exclude from the comparison.	x
<b>Mexico</b>	2.89	There is a risk that nurses who work simultaneously in private and public sector are counted twice.	Exclude from the comparison.	x
<b>The Netherlands</b>	10.58	-	-	10.58
<b>New Zealand</b>	10.28	-	-	10.28
<b>Norway</b>	17.49	Data includes nurses based on achieved education, not on current occupation.	Statistics from the webpage of the Norwegian chamber of nurses: <a href="https://www.nsf.no/statistikk/artikkelliste/539297">https://www.nsf.no/statistikk/artikkelliste/539297</a> show lower numbers. The stated number is reduced by the number of nurses working outside of healthcare and social sector: <a href="https://www.nsf.no/Content/4124500/see_file">https://www.nsf.no/Content/4124500/see_file</a>	11.74
<b>Poland</b>	5.16	The number also includes nurses working in long-term care centres.	It is unsuitable to exclude nurses working in long-term care. According to NHIC reports, more than 2,000 FTE work in long-term care, of which 674 in outpatient care. Moreover, it is in the interest of the Slovak healthcare to also count nurses in long-term care, eventually increase their numbers.	5.16
<b>Portugal</b>	6.47*	Data are available only for Professionally active nurses (also nurses working in administration, education or research).	The number was decreased based on the average proportion of nurses in non-medical jobs from other countries.	6.02
<b>Slovakia</b>	6.23*	-	-	6.23
<b>Slovenia</b>	9.65	-	-	9.65
<b>Spain</b>	5.51	Data also include midwives and it is impossible to exclude them from the number of nurses.	Exclude from the comparison.	x
<b>Sweden</b>	11.07*	Data include all licensed nurses, not only those working.	Exclude from the comparison.	x
<b>Switzerland</b>	17.02	Data only include nurses in hospitals and long-term care.	The number of nurses stays because even without outpatient care, it considerably surpasses the average.	17.02
<b>Turkey</b>	1.93*	Developing country, not compared.	Exclude from the comparison.	
<b>United Kingdom</b>	7.88	-	-	7.88
<b>USA</b>	11.61*	Data include part of midwives and do not include	Exclude from the comparison.	x



		self-employed professionals.	
Average		<b>9.17</b>	<b>9.58</b>
Shortage	of		<b>18,174</b>
nurses			

*\*Data from the 1<sup>st</sup> category Professionally active nurses before adjustment or data from the previous year.*

*Source: OECD, Institute of Health Information and Statistics of the Czech Republic, Australian Institute of Health and Welfare, NFS (Norwegian Pharmaceutical Society), calculations by VIM Division*

## Annexe 10. Programme structure for healthcare budget proposition – programmes and sub-programmes

**Table 60: Programmes and sub-programmes of the proposed programme structure for PHI**

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**Pharmaceuticals and pharmaceutical care**

Reimbursements for prescription pharmaceuticals by ATC groups

**Medical devices**

Medical devices – standard

Medical devices – individual

**Special medical material**

**Inpatient care**

Local hospitals

Regional hospitals

National hospitals

Other/specialised hospitals

**General outpatient care**

General care for adults

General care for children

Gynaecology

Dentistry

**Specialised outpatient care**

SOC – Dialysis

SOC – Physiatry, balneology and medical rehabilitation

SOC – Surgery

SOC – Ophthalmology

SOC – Internal medicine

SOC – ENT

SOC – Other total

**Common examination and treatment units**

CT examination

MRI examination

Laboratories

Other – diagnostics

**Emergency service**

**Rescue service**

**Spa care**

**Transport**

**Helicopter rescue service**

**Long-term health care**

**Other reimbursements outside HC and preventive HC activity**

Treatment abroad

Other HC

Operation of HIC

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*Source: MoH SR, Implementation Unit, VfM Division*

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## List of abbreviations

ADOS	Agentúra domácej ošetrovateľskej starostlivosti (Home care and nursing agency)	GDP	Gross domestic product
AE	Actual expenditure	GOC	General outpatient care
AOPP	Association for the Protection of Patients' Rights in Slovakia	GP	General practitioner
APA	American Psychiatric Association	HC	Healthcare
ATC	Anatomical Therapeutical Chemical Classification System of Pharmaceuticals	HCSA	Health Care Surveillance Authority
BCG	Boston Consulting Group	HIC	Health insurance company
BP	Budget proposal	HTA	Health technology assessment
CADTH	Canadian Agency for Drugs and Technologies in Health	ICD	International Classification of Diseases
CETU	Common examination and treatment units (spoločné vyšetrovacie a liečebné zložky)	IFP	Institute for Financial Policy
CMI	Case-mix index	IoHP/IZP	Institute of Health Policies (Inštitút zdravotnej politiky)
COFOG	Classification of Functions of Government	LCP	List of categorised pharmaceuticals
CP	Central procurement	LTC	Long-term care
CPI	Consumer Price Index	MACI	Multi-annual cost index
CPP	Centrally procured pharmaceuticals	MEA	Managed entry agreement
CS	Caesarean section	MoF SR	Ministry of Finance of the SR
CT	Computer tomography examination	MoH SR	Ministry of Health of the SR
CTG	Cardiotocography	MoLSAF SR	Ministry of Labour, Social Affairs and Family of the SR
DALY	Disability-Adjusted Life Years	MP	Minimum pay
DCG	Diagnostic Cost Groups	MRC	Marginalised Romany community
DDD	Daily defined dose	MRI	Magnetic resonance imaging
DF	Children's teaching hospital	NHIC	National Health Information Centre
DOS	Dom ošetrovateľskej starostlivosti (type of nursing home)	NHS	National Health Service (UK)
DRG	Diagnosis-related groups – payment per diagnosis	NICE	National Institute for Health and Care Excellence
EBITDA	Earnings before Interest, Taxes, Depreciation and Amortisation	NPC	No-policy change
EC	European Commission	OECD	Organisation for Economic Co-operation and Development
ECG	Electrocardiography	OOP	Out-of-pocket payments for healthcare
EE	Expected expenditure	OPIO	Odkázanosť na pomoc inej osoby (Reliance on care by another person)
ENT	Otorhinolaryngology	P4P	Pay-for-performance
EMA	European Medicines Agency	PC	Policy change
ESA	European system of accounts	PCG	Index based on pharmaceuticals consumption
EU	European Union	PCIP	Potentially cost-ineffective pharmaceuticals
EU15	Countries which entered the EU before 2004	PHI	Public health insurance
EU28	Member states of the European Union	PXE	Power Exchange Central Europe
FFS	Fee-for-service	QALY	Quality-adjusted life year
FN	Teaching hospital	SCP	Slovak Chamber of Psychologists
FNPV	Fond na podporu vzdelávania (Slovak Education Support Fund)	SDTP	Standard diagnostic and treatment procedures
GBDCN	Global Burden of Disease Collaborative Network	SGR	Self-Governing Region
		SHA	System of Health Accounts
		ŠÚKL	Štátny ústav pre kontrolu liečiv (State Institute for Drug Control)

SMM	Special medical material
SOC	Specialised outpatient care
SPsS	Slovak Psychiatric Society
SLS	
UN	University hospital
URPO	Úrad pre riadenie podriadených organizácií (organisation managing teaching and university hospitals in Slovakia)
V3	Visegrád group without Slovakia
V4	Visegrád group countries
VAT	Value-added tax
VfM	Value for Money
VšZP	Všeobecná zdravotná poisťovňa, a.s.
WB	World Bank
WHO	World Health Organisation
X-ray	X-ray examination



