MINISTRY OF FINANCE OF THE SLOVAK REPUBLIC

Ministry of Health of the Slovak Republic

Review of Healthcare Expenditure

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Introduction and Summary

The Slovak Government launched the Hodnota za peniaze (Value for money) project , which aims to reform rules, adjust processes and strengthen institutions that will support implementation of good decisions in the public interest and significantly improve value for money in the Slovak public sector.

One of the instruments of Hodnota za peniaze is the complex review of majority of public expenditure. The Government committed itself to the project in its Programme Statement; plans for the parliamentary term have been defined in more detail in The Stability Programme for Slovakia.
In 2016, the review focuses on healthcare, transport and computerisation of the public administration. The review of expenditure re-evaluates the majority of public expenditure during the parliamentary term. It evaluates efficiency of expenditure and identifies measures to increase the value for money of public finances, enabling fiscal saving, better public services for the citizens (results) and/or transfer of funds to the government's priorities. It proposes measures in a long-term sustainable manner.

The interim report identified areas with the largest scope for effectiveness improvement. The fiscal report provides a break-down of the outlined issues And sets out measures. The report is part of the public administration budget.

The review of expenditure is a standard instrument in developed countries. It helps governments to seek ways for more effective utilization of public resources in public policies, as well as making the necessary savings to fulfil national and European fiscal obligations.

One key aspect of the evaluation is to identify and properly value all costs and benefits in a complex manner. Financial costs and benefits constitute the backbone. Analysis is also aimed at quantifying non-financial benefits and costs, in monetary terms,
as much as possible, providing the State with a complex overview of benefits and costs of individual projects.

The review of expenditure on healthcare, amounting to 5.6 % of GDP (EUR 4,443 million) per year, in terms **of expenditure, is intended to identify possible savings, predominantly with the medical care expenditure** and consequently use the saving for effective and necessary investments into patient facilities, as well as for buffering the expenditure growth to the level of growth in the economy. **The objective of the review is to reduce the number of deaths preventable with medical care** to the average of Czech Republic, Poland and Hungary (V3 countries). Achieving the objective requires effective redistribution of resources, transfer from sectors where resources are not spent efficiently to sectors where they will contribute to the reduction of **deaths preventable with medical care**.

Compared to the neighbouring countries, Slovakia spends more on healthcare, however it is lagging behind in terms of results. Czech Republic, Poland and Hungary have on average 18 % fewer **deaths preventable with medical care**. **One reason why Slovakia is lagging behind is the low efficiency of Slovak**

healthcare. If increased to the OECD average, life expectancy in Slovakia would be extended by 3 months, or Slovakia would be able to achieve same life expectancy with 8 % lower expenditure [1].

The review identified measures amounting to EUR 174 million in 2017. EUR 143 million of that sum is expenditure on public health insurance. The identified measures will lead to internal restructuring of expenditure on PHI without economy of scale of the medical care provided. Efficient operation and cost-efficient procurement in the hospitals subordinated to MH SR will provide another EUR 31 million. More efficient operation and procurement will help to discontinue indebtedness of the hospitals, and provide space for capital investments in reconstruction and instrumentation.

Table 1: **Saving measures**

EUR million	**2017**	**2018**	**2019**	***potential saving***
Measures reducing expenditure of PHI	**143**	**159**	**165**	**268**
Over-consumption of medicines – implementation of prescription limits for outpatient care providers	20	20	20	59
Medicine exceptions – implementation of rules for coverage of exemptions	10	10	10	10
Cost-ineffective medicines – central purchasing of medicines by HIC	25	25	25	42
Special medical material – price reduction (referencing)	35	45	45	55
Medical devices – referencing and review actions	15	15	15	15
CDTU – reduction of price per procedure and limits for CT and MRI examinations	10	16	22	25
CDTU – implementation of limits for outpatient care providers	3	3	3	37
Improvement of review actions of VZP	25	25	25	25
Measures reducing expenditure of hospitals (organisations subordinated to MH SR)	**31**	**31**	**31**	**95**
Optimising of operating costs	5	5	5	10
Optimising of medical processes	15	15	15	74
Optimising of purchasing of medicines and SMM	8	8	8	8
Cost-efficient procurement of medical devices	3	3	3	3

Source: MF SR

Draft budget for 2017 indicates budget for healthcare that is EUR 69 million higher than what the Hodnota za peniaze scenario identified[2]. Potential savings, identified by the review of expenditure, shall be used for medical care, to effectively contribute to the reduction of **deaths preventable with medical care**. Areas into which the saved funds identified by review will be targeted in 2017 shall be specified in the course of implementation.

Table 2: Healthcare resources according to PAB and Hodnota za peniaze scenario (growth based on inflation)

EUR million	**2015 F**	**2016 EF**	**2017 R**	**2018 N**	**2019 N**
Selected public resources in healthcare – TOTAL – REH	4,290	4,335	4,443	4,666	4,927
Health insurance – EAP (including AAHI)	2,880	2,934	3,100	3,286	3,500

[1] Methodology of study **– Málo zdravia za veľa peňazí (Little health for a lot of money): Analýza efektívnosti slovenského zdravotníctva (Analysis of efficiency of Slovak healthcare)** http://www.finance.gov.sk/Default.aspx?CatID=8789. Discrepancy can be caused by inconsistent reporting of statistics.

[2] VfM scenario assumes, that resources should develop in accord with increase of the prices, and resources should also be used for financing of additional investments into patient facilities.

Health insurance – revenue for the persons insured by state (including AAHI)	1,349	1,355	1,296	1,334	1,381
Health insurance – other revenues (200,300)	61	47	46	46	46
Selected public resources in healthcare – TOTAL – Hodnota za peniaze (growth based on inflation)			**4,374**	**4,514**	**4,754**
Difference between REH and Hodnota za peniaze scenario			*69*	*153*	*173*

Source: MF SR

The healthcare review identified measures in the following areas with significant room for improvement of efficiency of expenditure – increase in value for money:

1. Medicines, medical devices and special medical material – in 2017, expenditure on medicines, medical devices and special medical material will decrease by EUR 105 million, mainly due to measures in the area of over-consumption of medicines and referencing of prices of SMM and medical devices. The review identified the overall potential for improvement of efficiency by EUR 105 – 389 million. Slovakia has among the lowest prices of medicines and medical devices in the EU thanks to referencing. Despite that, Slovakia spends more per capita than neighbouring countries on medicinal products, including medicines.

2. Health institutions – thanks to measures optimizing operation, processes and procurement, hospitals (organisations subordinated to MH SR) will save EUR 31 million. The identified sources will help to discontinue the indebtedness of hospitals, and provide space for capital investments into reconstruction and instrumentation. The expenditure review identified possible savings of EUR 84 million per year in operation and procurement of teaching hospitals and university hospitals (without procurement of medicines, SMM and medical devices). Hospitals keep getting in debt, even following the repeated discharge of debts by the state. In the first half of 2016, the obligations of the 13 largest hospitals of the MH SR amounted to EUR 591 million (before due and overdue obligations). The introduction of DRG (hospital financing system based on diagnosis) will also strengthen direct liability of the hospitals for costs, and will introduce transparent and just payments for procedures.

3. Radiology medicine and laboratories – Reducing the price of CT and MRI examinations by implementing limits will bring saving of EUR 13 million in 2017. Analysis of radiology examinations and laboratory procedures identified possible savings of EUR 13 – 91 million.

4. Patient transport and ambulance vehicles – the review proposes number of procedural measures that will increase the appropriateness of the use of this service.

5. Medical professionals – improvements in the efficiency of public expenditure shall be achieved by further enhancing the competence of general practitioners, nurses and medical assistants and transferring of competences.

6. Doctor's appointments – motives for high number of doctor appointments and connection thereof with the over-consumption of medicines in Slovakia needs to be further examined. Slovaks have more appointments with their practitioners compared to the general average in the EU (11 vs. 7 appointments per year).

Measures

The review of expenditure identified measures in number of areas. The first group includes **measures which will bring savings** and improve the fiscal sustainability of the medical care system. Further **measures will contribute to increase in value**, thus improving medical care and consequently reducing number of **deaths preventable with medical care**. The area of management includes **measures to improve management processes and transparency**. **Measures concerning data collection and methodologies** will improve the quality of information on the objective state of the healthcare. The latter group of **measures identifies areas in need of further analysis**.[3]

Saving

Task	*Value*	*Measurable indicator*	*Liability*
Reduction of over-consumption of medicines – implementation of prescription limits for outpatient care providers	EUR 20 million	• Average number of prescriptions made or recommended by a doctor per year per patient (units) • Overall coverage from health insurance companies for prescribed medicines (EUR)	MH SR
Cost-ineffective medicines – central purchasing of medicines by HIC	EUR 25 million	• Volume of centrally procured medicines out of the overall sum of medicines	MH SR
Medicine exceptions – implementation of rules for coverage of exemptions	EUR 10 million	• Definition of parameters • Existence of statutory arrangement	MH SR
Referencing (decrease) of prices of SMM	EUR 35 million	• Existence of the database with foreign pricing of SMM • Number of countries in pricing database	MH SR
Referencing of prices and improvement of review actions in the area of medical devices	EUR 15 million	• Existence of the database with pricing of foreign HIP • Number of countries in pricing database	MH SR
Optimising of operating costs of hospitals	EUR 5 million	• Amount of operating costs • Unit prices of the procured services and energies	MH SR, hospitals
Optimising of medical processes in organizations subordinated to MH SR	EUR 15 million	• Amount of operating costs	MH SR, hospitals

[3] Number of measures are currently elaborated and gradually implemented by the Ministry of Health of the SR. Detailed overview of projects can be found in Annex 5.

Optimising of purchasing of medicines and SMM in organizations subordinated to MH SR	EUR 8 million	• Costs of medicines	MH SR, hospitals
Cost-efficient procurement of medical devices	EUR 3 million per year	• Contract and market prices of medical devices	MH SR, hospitals
Reduction of price per imaging procedure (CT and MRI) and limits thereof	EUR 10 million per year	• Unit price per imaging procedure • Total costs of imaging procedure	MH SR, insurance companies
Reduction of prescription of radiology examinations and laboratory procedures – implementation of limits for outpatient care providers	EUR 3 million per year	• Average number of radiology examinations requested by doctor per patient per year • Average costs of requested laboratory procedures • Total costs of radiology examinations	MH SR
Improvement of review actions	EUR 25 million	• Number of reviews/actions	MH SR

Value

Task	*Value*	*Measurable indicator*	*Liability*
Prescription for active substance instead of specific medicine		• Existence of new rules for doctor prescriptions • Generics consumption	MH SR
Exchange of information on medicines export between SIDC and Financial Administration of the SR/SO SR		• Existence of statutory arrangement	MH SR, MF SR
Introduction of standard diagnostic and therapeutic procedures		• Number of diagnoses issued with standard procedures	MH SR
Computerisation of medical documentation and electronic prescription documentation		• Number of doctors using electronic medical documentation	MH SR
Modification of the grid of emergency hospital and re-profiling of hospitals		• Number of institutions in the emergency hospital network	MH SR

Introduction of clear rules for patient payments	• Existence of statutory arrangement	MH SR

Management

Task	*Measurable indicator*	*Liability*
Increase of independence and professionalism of categorisation bodies	• Existence of remunerated functions • Number of members of bodies chosen via the selection process • Number of foreign staff members	MH SR
Increase of transparency of categorisation bodies	• Disclosure of conflict of interests of members, their meeting agenda and reasons for variations in voting.	MH SR
Mandatory collection of data on usage of temporarily categorised medicines	• Existence of collection • Number of medicines with usage data being collected	MH SR (SIDC)
Introduction of binding rules for coverage of medicines with exemptions	• Existence of statutory arrangement	MH SR
Implementation of DRG	• Proportion of hospital expenditure covered under DRG scheme out of total expenditure	MH SR
Enhancement of competences of general practitioners	• Number of diagnoses transferred from the competence of specialists to general practitioners	MH SR
Strengthening of competences of nurses and assistants	• Number of med. procedures transferred from the competence of doctors to nurses, from nurses to assistants	MH SR
The involvement of the transport medical service providers into the integrated rescue system	• Number of trips of TMS on the initiative of IRS	MH SR
Detection of presence of alcohol or drugs in bloodstream of patients brought in by the emergency services	• Number of cases	MH SR
Implementation of GPS-based communication between emergency medical service hub	• Number of ambulance service hubs without the implemented communication • Number of AS vehicles without	MH SR

and the EMS vehicle	implemented communication	
Introduction of budget negotiations on amount of total resources needed in healthcare and on utilization thereof for medical care purchasing at the level of individual medical care areas		MH SR, MF SR, insurance companies

Data and methodology

Task	*Measurable indicator*	*Liability*
Integration of AS providers into eHealth	• Existence of integration	MH SR
Modification of data reporting for international institutions	• Number of indicators modified according to the specification	MH SR (NHIC, SIDC)
Publication of NHIC data in standardized form	• Number of indicators published in standardized form	MH SR (NHIC)
Revaluation of structure and quality of data reported by medical care providers	• Existence of methodological arrangements	MH SR (NHIC)
Expansion of insurance company monitoring structure by expenditure in the area of medical care	• Existence of statutory arrangements	MF SR
Publishing of rankings of prescriptions by doctors within their specialisation	• Existence of rankings made public	MH SR

Analytical tasks

Task	*Liability*
Development of a tool to determine more accurately the need for medical care expenditure regarding the sustainability of public finance	MH SR, MF SR
Analysis of consumption of over-the-counter medicines.	MH SR, MF SR
Analysis of general practitioner patient management (gatekeeping) from the point of	MH SR, MF

view of the powers of general practitioners, payment mechanisms, and motivations (capitation)	SR
Re-evaluation of the competences of general practitioners, nurses and medical assistants in institutional care	MH SR
Examination of the current remuneration of medical care employees (doctors and nurses in particular) that will propose a method for taking performance and quality into account in the remuneration system	MH SR
Setting criteria and indicators for quality evaluation of the provided care	MH SR, MF SR
Inclusion of a PCG parameter in the analysis of variability of prescription of laboratory procedures and imaging examinations.	MH SR, MF SR

1 Objectives of the healthcare expenditure review

The objectives of the review are to improve healthcare results and to strengthen the fiscal sustainability and efficiency of expenditure. The review identified measures to increase the efficiency of medical care expenditure. The resources thus made available can then be used in areas that will contribute to increasing the value of the medical care provided. **The budget for 2017 indicates resources for healthcare that are EUR 69 million higher than what the Hodnota za peniaze (Value for money) scenario identified**. The scenario assumes that resources should evolve in accordance with price increases. Potential savings identified by the review of expenditure, shall be used on medical care, to effectively contribute to reducing **deaths preventable with medical care**. Areas, into which the saved funds identified by review will be targeted in 2017, shall be specified in the course of implementation.

Table 3: Healthcare resources according to PAB and Hodnota za peniaze scenario (growth based on inflation)

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Source: MF SR

Compared to the neighbouring countries, Slovakia spends more on healthcare. However it is lagging behind in terms of results. The Czech Republic, Poland and Hungary have on average 18 % fewer **deaths preventable with medical care**.

Avoidable mortality is the number of deaths (of specific age groups and specific diagnoses defined in ICD classification),[4] which can be avoided. There are two types of death – curable and preventable deaths.

Curable deaths are those that are avoidable with quality medical care. These deaths are tracked using the indicator **deaths preventable with medical care** (amenable mortality), which was chosen as the objective**.** The preventable mortality indicator contains deaths that are avoidable with measures in the area of public health affecting behaviour and lifestyle, social-economic status and environmental conditions.

1.1 Health Indicators

Well-chosen indicators of inputs and results are able to efficiently measure the value provided by the public policy. In addition to the objective, which is **deaths preventable with medical care**, a list of other indicators has been created, providing information on healthcare as a whole, as well as on individual areas, from the point of view of inputs, outputs and results. This also shows international comparison with average of OECD countries or V3[5].

Supplementary result indicators are: potential years of life lost for avoidable reasons, life expectancy, mortality of selected diagnoses and prevalence (occurrence) of selected diagnoses . Slovakia lags behind the OECD and EU averages in all indicators. We also lag when compared to V3. Better results are achieved only in the case of obesity, and more or- less the same result in the case of high blood pressure.

The potential number of years of life lost for avoidable reasons is represented by the difference between 70 years of age and death preventable with public-health measures. This indicator therefore gives more weight to premature avoidable deaths.

Life expectancy of women at birth is prioritised (to whole population statistics) in international comparisons, since it is less susceptible to negative impacts of lifestyle (smoking, high consumption of alcohol, etc.) and at the same time women have less risky behaviour.

Healthy life expectancy at birth also takes into account the qualitative aspect, as it represents average number

Table 5: Input healthcare indicators

of years of life that a person lives in good health.

Indicator	Source	SK/ Benchmark	2011	2012	2013	2014	2015

[4] International Statistical Classification of Diseases and Related Health Problems 10th Revision http://apps.who.int/classifications/icd10/browse/2015/en.

[5] In cases where data is not available for sufficient number of countries of a given group, specific country was chosen instead.

Deaths preventable with medical care (per 100,000 population)	Eurostat	SK	237.9	236.6	237.3	
		V3	206.3	201.9	195.8	
		EU28	125.2	122.9	119.5	
Potential years of life lost for avoidable reasons (per 100,000 population)	Eurostat	SK	5,748	5,615	5,426	
		V3	5,763	5,705	5,368	
		EU28	4,009	3,906	3,795	
Life expectancy at birth, women	OECD	SK	79.8	79.9	80.1	80.5
		V3	80.3	80.3	80.5	81.0
		OECD	82.7	82.7	83.0	83.3
Healthy life expectancy at birth	Eurostat	SK	52.3	53.1	54.3	54.6
		V3	62.0	62.5	62.3	62.8
		EU28	62.1	62.1	61.5	61.8
Mortality rate due to circulatory diseases, standardized (per 100,000 population)	OECD	SK	-	536.2	537.9	504.3
		V3	528.9	530.6	512.0	483.7
		OECD	294.7	302.5	299.2	349.1
Mortality rate due to tumours, standardized (per 100,000 population)	OECD	SK	-	260.3	266.8	266.0
		V3	262.9	263.0	256.9	258.4
		OECD	212.5	212.4	208.1	220.2
Obesity prevalence (% in adults)	OECD	SK		16.9		
		V3		21.8		
		EU27		16.7		
High blood pressure prevalence (% in adults)	WHO	SK			27.3	
		V3			27.9	
		EU28			22.9	
Infant mortality rate per 1,000 live births	OECD	SK	4.9	5.8	5.5	5.8
		V3	4.1	4.0	4.0	3.7
		OECD	4.2	4.1	4.0	3.8

In the case of input indicators, we are V3 front runners in terms of healthcare expenditure. While the income of doctors was on par with the average of the OECD in recent years, nurses' income is still below the OECD average. Similarly, the number of doctors slightly exceed OECD average, whereas the number of nurses is lagging behind.

Table 6: Input healthcare indicators

Indicator	Source	SK/ Benchmark	2011	2012	2013	2014	2015
Public healthcare expenditure (% of GDP)	OECD	SK	5.5	5.5	5.6	5.6	
		V3	5.1	5.1	5.1	5.3	
		OECD	6.4	6.4	6.5	6.5	
Income of general practitioners – employees (times the national average salary)	OECD	SK	1.8	2.1	2.2		
		Hungary	1.3	1.3	1.5	1.6	
		OECD	2.2	2.2	2.2	2.4	
Income of nurses – employees (times the national average salary)	OECD	SK	0.83	0.92	0.94	0.91	
		CZ	1.06	1.07	1.06	1.06	
		OECD	1.14	1.15	1.15	1.16	
Number of doctors (per 1,000 population)	OECD	SK	3.31	3.36	3.39	3.43	
		OECD	3.32	3.32	3.40	3.35	
Number of nurses (per 1,000 population)	OECD	SK	5.9	5.8	5.8	5.8	
		Poland	5.3	5.6	5.3	5.3	
		OECD	8.2	8.4	8.3	8.0	

The result indicator of the constitutional care is re-hospitalisation. In terms of the input indicator – number of hospital beds – SK and V3 are ahead of the OECD. Utilization of hospital beds and hospitalisation duration are lower in Slovakia compared to V3 and the OECD. The number of patients on the waiting list for a procedure has been decreasing since 2012 but the amount of hospital debt is increasing.

Re-hospitalisation measures **the** quality of the medical care provided. Better care implies lower likelihood of re-hospitalisation of the patient with same diagnosis within a particular time. Currently, there is a difference in the manner in which individual health insurance companies present this indicator.

Table 7: Constitutional medical care

Indicator	Source	SK/ Benchmark	2011	2012	2013	2014	2015
Re-hospitalisation: Proportion of repeated hospitalisation within 30 days with same diagnosis (%)	HIC	SK			12.0	12.4	11.5
Total number of hospital beds per 1,000 population	OECD	SK	6.1	5.9	5.8	5.8	
		V3	6.9	6.8	6.7	6.7	
		OECD	4.9	4.9	4.8	5.0	
Utilization of emergency hospital beds (%)	OECD	SK	65.5	67.3	67.4	68.9	
		CZ	72.8	73.1	73.9	74.9	
		OECD	75.5	75.4	76.4	76.4	
Average duration of hospitalisation (number of days)	OECD	SK	6.3	6.2	6.2	7.0	
		V3	6.6	6.4	6.3	6.3	
		OECD	6.7	6.7	6.5	6.7	
Patients waiting for planned procedure relating to muscular and skeletal diseases and connective tissue diseases on 31 December	HCSO	SK	5,345	5,958	5,300	4,455	3,343
Amount of the overdue liabilities of the teaching hospitals in EUR million	MH SR	SK	67	136	249	317	426

The result indicator of the outpatient care is the proportion of patients transferred to the higher level specialist. This is at a standstill, in the short period for which data is available. Input indicator – number of appointments – is higher compared to V3 and OECD. The result indicators – proportion of same-day surgery and preventive examinations – are increasing.

Proportion of patients transferred to a higher-level specialist concerns the *gatekeeping* of first-contact doctors. This is to regulate patient access to more expensive medical care.

Same-day surgery concerns reducing the need for hospitalisation, and thus saving institutional care capacities (e.g. hospital beds).

Table 8: Outpatient services

Indicator	Source	SK/ Benchmark	2011	2012	2013	2014	2015
Number of doctor appointments (per capita per annum)	OECD	SK	11.0	11.2	11.0	11.3	
		V3	9.9	10.0	10.0		
		OECD	7.1	6.9	7.2	7.0	
Proportion of appointments of the patients transferred to the higher level specialist (%)	MH SR	SK			80	79	
Proportion of same-day surgery in the total number of procedures (%)	NHIC	SK	32.5	36.7	38.2	42.5	43.4
Patients who received their preventive examination (v %)	MH SR	SK			32	39	

Generics consumption is relatively high in Slovakia, though it has a downward trend however, unlike in other countries. Given that their price is lower than original medicines, it would be desirable to increase their share. On the other hand, high antibiotics consumption is an undesirable phenomenon linked to the increase in resistance to them, which has negative impacts on treatment. Antibiotics consumption is higher in Slovakia then the average in V3 or OECD.

Generic medicines contain the same active substance as original medicines, but are known for lower price due to the absence of R&D costs.

Table 9: Medicines

Indicator	Source	SK/ Benchmark	2011	2012	2013	2014	2015
Generics usage (proportion of the overall expenditure on medicines financed from PHI)	OECD	SK	40.6	40.2	37.8	37.9	
		OECD	20.5	21.8	23.6	24.4	
Antibiotics usage (defined daily doses per 1,000 population/day)	OECD	SK	23.7	21.9	25.9	24.8	
		V3	18.7	18.4	19.3	19.3	
		OECD	21.2	20.9	21.2	20.2	

Primary interventions of the emergency medical service are used for life-threatening patient situations, therefore **arrival time** can be a decisive life-or-death factor. Arrival time has worsened by 1 minute since 2011, whereas

Table 10: Transport

the number of interventions is rising.

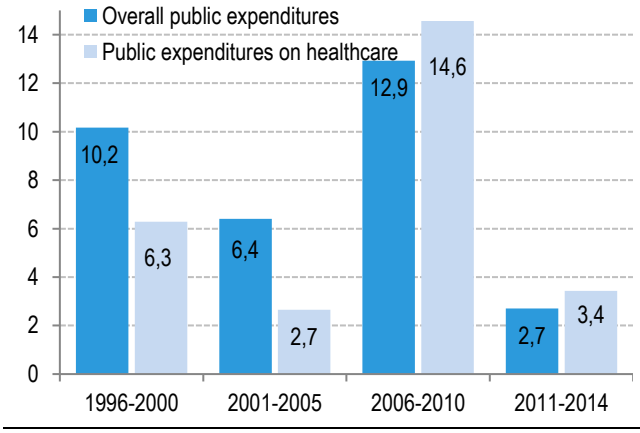
Indicator	Source	SK/ Benchmark	2011	2012	2013	2014	2015
Average time of arrival of primary interventions of EMA and QMA (minutes)	ASH	SK	11:05	11:29	11:47	11:33	12:06
Number of primary interventions of EMA and QMA per 1,000 population	ASH	SK	83.0	86.3	85.9	87.4	92.1

2 Expenditure on healthcare

Public expenditure on healthcare in Slovakia has, in recent years, increased faster than total public expenditure. The average growth rate of public expenditure on healthcare[6] between 2005 – 2010 exceeded the growth of total public expenditure by almost 2 p.p.. Between 2011 – 2014 this difference decreased, but the expenditure on healthcare still grew 0.7 p.p. faster than total public expenditure.

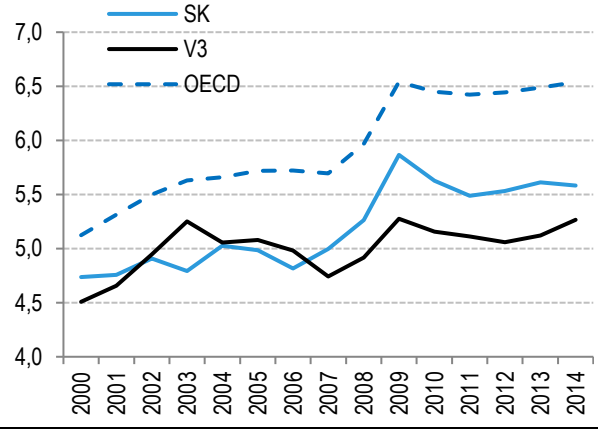
Slovakia's healthcare expenditure, as a share of GDP, are higher than V3 countries average. However it is lagging behind in terms of results. According to OECD, public expenditure on healthcare in Slovakia accounted for 5.6 % of the GDP, which is 0.3 p.p. more than average in V3 countries. At the same time, these countries had on average 18 % fewer deaths preventable with medical care (2 264 fewer deaths, calculated to Slovak population) and residents thereof are living longer (life expectancy is higher by five months in women and six months in men) in 2013 (most recent data).

Chart 1. Average growth of the public administration expenditure (%)



Source: Eurostat

Chart 2: Public healthcare expenditure (% of GDP)



Source: OECD

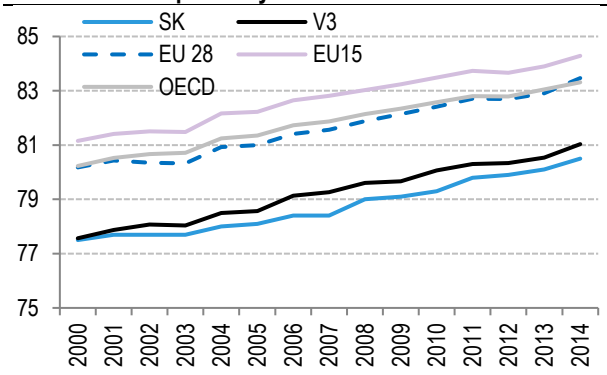
One reason is the low efficiency of Slovak healthcare in comparison to OECD and V3 countries. If the efficiency of the Slovak healthcare was on a par with the OECD average, life expectancy would extend by 3 months, or alternatively, Slovakia would be able to achieve current life expectancy with lower expenditure (8 %).[7] If Slovak healthcare was as efficient as the average of the EU 20[8] plus Switzerland and Norway, the average age would extend by half a year, or alternatively, 11 % lower expenditure would suffice to achieve the current life expectancy.

[6] Using the COFOG functional classification. In May 2015 Eurostat modified the methodology for classification of public expenditure COFOG. New methodology classifies all social funds expenditure (S.1314) as social security expenditure. Health insurance funds expenditure (in sub-sector S.1314) also moved from the area of healthcare to social security expenditure. Expenditure on healthcare in Slovakia therefore decreased by about 5 p.p. of GDP and social security expenditure increased by that amount. Hence, expenditure on healthcare are currently made up only from expenditure of the medical institutions in the sector of public administration.

[7] Efficiency is quantified as the difference of the actual life expectancy at birth and the life expectancy, that is achieved at a given level of inputs under the model based on the study **Málo zdravia za veľa peňazí (Little health for a lot of money): Analýza efektívnosti slovenského zdravotníctva (Analysis of efficiency of Slovak healthcare)** http://www.finance.gov.sk/Default.aspx?CatID=8789.

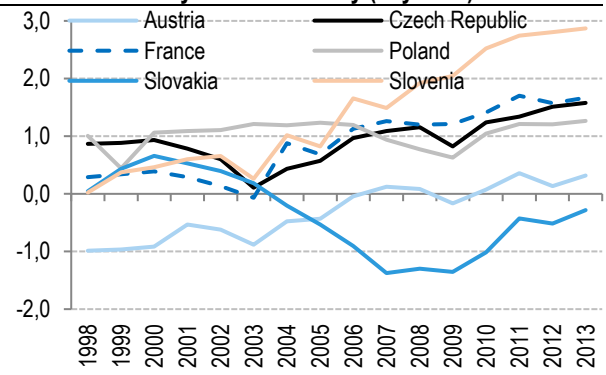
[8] No data available for Bulgaria, Cyprus, Croatia, Ireland, Lithuania, Latvia, Malta and Romania.

Chart 3: Live expectancy of women[9] at birth



Source: OECD

Chart 4: Health systems efficiency (in years*)

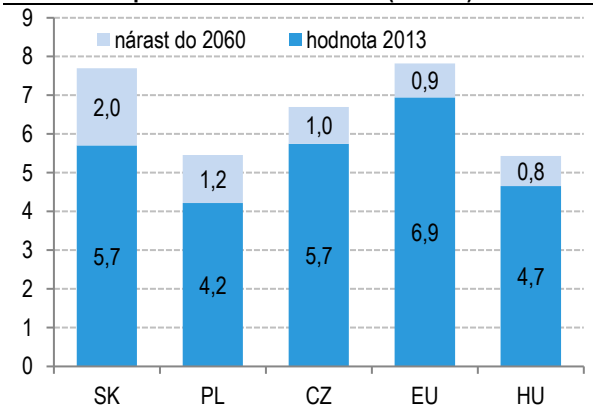


Source: IFP according to OECD

**difference of the actual and the potential life expectancy achieved, if the health system was at the efficiency level of the OECD average*

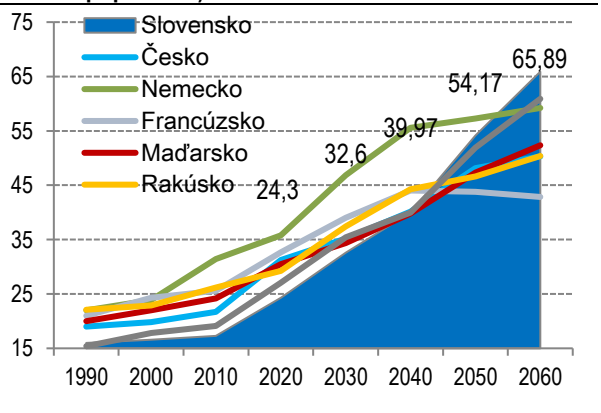
According to the current forecast of the European Commission, healthcare expenditure in Slovakia will have the third quickest growth in the EU. According to the Working Group on Ageing Populations of the EU,[10] Slovak public expenditure on healthcare is expected to rise by another 2 % of the GDP by 2060 to 7.7 % of GDP. Expenditure in Slovakia will grow faster than in other countries. In the EU, it is expected to grow 0.9 % of the GDP on average by 2060. The main reason for this is the growing need for medical care for the elderly. For example, annual expenditure on 75-year old average men is roughly 7-times that for 25-year olds. The overall development will be the combination of two contradictory tendencies. While a reduction in the population reduces the total expenditure on healthcare, growing number of older people, whose care is more expensive, increases expenditure significantly.

Chart 5: Expenditure on healthcare (% GDP)



Source: AWG 2015

Chart 6: Dependency index (ratio of 65+ population to 15 – 64 population)



Source: Eurostat, EUROPOP 2013

Chart 5 above – light blue is growth by 2060, blue is the value of 2013

[9] In international comparisons, the use of live expectancy of women at birth is prioritised, since it is less susceptible to negative impacts of lifestyle (smoking, high alcohol consumption, etc.) and at the same time women are more risk-averse (women have less risky behaviour).
[10] Working Group on Ageing Populations and Sustainability, AWG

Chart 6 above – Blue is for Slovakia, light blue is for Czech Republic, green is for Germany, light grey is for France, red is for Hungary, yellow is for Austria and dark grey is for Poland

The total expenditure of the health insurance companies was EUR 4.2 billion (5.4 % of the GDP), of which EUR 4.0 billion (5.1 % of the GDP) went towards medical care. In the individual areas of medical care expenditure, the largest budget in 2015 was spent on pharmacies (EUR 904 million, 1.1 % of the GDP), general hospitals (EUR 890 million, 1.1 % of the GDP) and common diagnostic and therapeutic units (CDTU, e.g. CT, MRI and laboratory procedures; EUR 440 million, 0.5 % of the GDP). Largest year-on-year increase was recorded in expenditure on mobile hospices (34.8 %), one-day care (30.3 %) and nursing care facilities. On the contrary, there was a reduction in expenditure on specialized outpatient care, including Type A medicines (-3.7 %) and dialysis (-1.5 %).

Table 11: Public health insurance (EUR million)

	2013	2014	2015
Total income	**4,224**	**4,315**	**4,519**
Tax assets	**3,893**	**3,985**	**4,231**
EAP	2,613	2,771	2,881
Persons insured by state	1,277	1,212	1,349
Remuneration for assignment of a claim	3	2	1
Not-tax income	25	32	46
Grants and transfers	0	0	0
Total expenditure	**3,927**	**4,088**	**4,214**
Insurance expenditure on medical care of which	3,672	3,882	3,996
Pharmaceutical care	999	1,042	1,077
Outpatient care of which:	1,448	1,567	1,616
general outpatient care	264	276	293
specialized outpatient care	1,108	1,208	1,233
Institutional care of which:	1,084	1,175	1,246
general hospitals	769	837	890
specialized hospitals	156	174	183
Medical care provided to the foreigners, care provided abroad, to the homeless, to refugees, urgent medical care provided HIC	25	31	36
Other	116	66	20
Payment for management of PHI	46	50	47
Expenditure on operation of state-run health insurance company out of which:	64	72	77
Wages, salaries	30	31	33
Insurance rate and the contribution to health insurance companies	12	13	13
Goods and services	22	28	30
Current transfers	1	1	1
Capital expenditure	4	5	4
Contributions to the functioning of HCSO, NHIC, ASH	43	40	46
Other payments – obligations	97	39	44

Source: MF SR, HCSO

Notes: The table does include data of the MF SR on funds management of PHI with the data of HCSO (financially granted procedures) on expenditure on specific areas of medical care. The item "others" explains the discrepancy between data of the HCSO and MF SR on medical care expenditure. This discrepancy is 0.5 % of medical care expenditure.

2.1 Budgeting of the expenditure on public health insurance

When the state makes payments to the public health insurance system, there is no discussion about the necessary expenditure and purpose for which it is to be used. The public health insurance system is financed from the contributions from the economically active population and payments by the state. Payment of the state is

the health contributions for selected groups of the population (children, students, pensioners, etc.)[11], which is paid to the health insurance companies by the state. Under the law, the rate for persons insured by state is usually 4 % of the taxable amount, which is the average wage two years ago. There is a long-term political discussion on whether this rate is appropriate and it has been adjusted numerous times in the past.

It is important to discuss in the budget negotiations which areas of medical care (e.g. medicines, general practitioners, hospitals) need funding and in what amounts. Medical care expenditure was, in terms of budgetary procedure, usually budgeted only collectively. In comparison, the expenditure of the Ministry of Health amounted to EUR 88 million in 2015, exclusive of payments for persons insured by the state, budgeted in detail, without the resources of the EU and co-financing. Health insurance companies' expenditure on medical care, budgeted collectively, was EUR 4 billion, 45-times higher in the same period.

Health insurance companies provide a detailed structure of expenditure on medical care, as stated in Annex 1. A detailed forecast of expenditure on public health insurance was done in the past, but was later abandoned. It is desirable to introduce discussion into the budget negotiations on the total amount of resources needed in healthcare and utilization thereof for the purchase of medical care in terms of individual areas, as noted in Annex 1.

- **Measure:** It is desirable to introduce **discussion into the budget negotiations on amount of total resources needed in healthcare and utilization thereof for the purchase of medical care in terms of individual areas** (as noted in Annex 1).
- **Measure:** From the point of view of budgetary procedure, **it is necessary to develop a tool for objective determination of the need for medical care expenditure.** Budgeting of resources of PHI shall primarily be based on the objective need for additional resources and sustainable fiscal targets of the Government in healthcare[12].

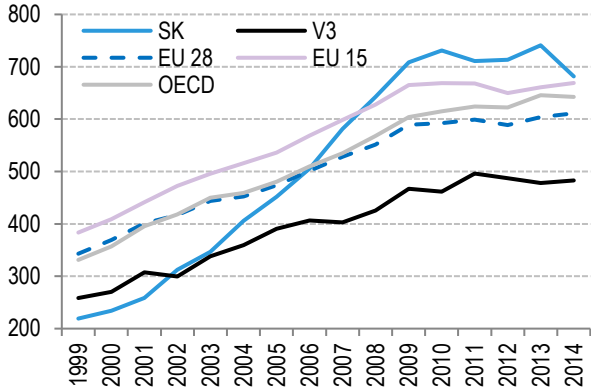
[11] Exact definition of persons insured by state in the Act No 580/2004.
[12] Council for Budget Responsibility developed its own instrument, simulating long-term expenditure on medical care, based on the current cost structure and assuming no policy change.

3 Areas of the review

3.1 Medicines, medical devices and special medical material

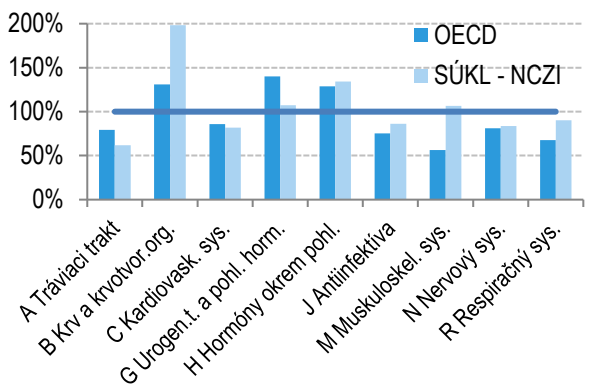
Slovakia has among the lowest prices of medicines and medical devices in the EU[13] thanks to referencing. Despite that, Slovakia spends more per capita than neighbouring countries on medicinal products, including medicines. While the Czech Republic, Poland and Hungary spent USD 483 USD per capita on medicinal products, including medicines, in 2014, expenditure in Slovakia amounted to USD 669 (public and private resources)[14]. This can be attributed to high consumption and inefficient system of health insurance coverage, as well as methodology differences in the reporting of the individual countries.[15]

Chart 7: Expenditure on medicinal products, including medicines (USD, PPP, per capita)



Source: OECD

Chart 8: Proportion of Czech consumption to Slovak consumption (%) * according to OECD and SIDC – NHIC



Source: OECD, SIDC, NHIC

** Consumption as DDD per 1,000 population/day. If any ATC group has value less than 100 % (under the line), it means that Czech consumption is lower than Slovak consumption.*

Chart 8 above – light blue is Czech State Institute for Drug Control – SIDC and Slovak National Health Information Center – NHIC. Column A is gastrointestinal tract, B is blood and haematopoiesis, C is cardiovascular system, G is urogenital and sex systems, H is hormones other than sex hormones, J is anti-infective medicines, M is musculoskeletal system, N is nerve system, R is respiratory system.

High consumption of medicines

If Slovakia reached the level of the consumption of Czech Republic in those ATC groups, where its consumption is higher, the difference compared to present PHI coverage would be EUR 65 million, and the difference in patient excess payment would be EUR 14 million[16]. Slovakia consumes more medicines for gastrointestinal tract, cardiovascular, nervous and respiratory systems, and anti-infectious agents. The result of the comparison of medicines consumption in the defined daily doses (DDD), based on OECD data, was re-confirmed by data

[13] Price of medicines, medical devices and dietary foods in Slovakia is set as the average of three lowest officially set prices in the EU Member States, according to the Act No 363/2011. Special medical material and dietary foods are currently periodically referenced. Periodic referencing of the medical devices started in 2016. Periodic referencing of the SMM is planned to start in 2017.

[14] Calculated with purchasing power parities and expressed in current prices.

[15] International comparison may imply inclusion of inconsistent methodologies and overlooking national specificities. Such comparisons are used as a starting point and an incentive for more detailed analysis and no conclusions are drawn from them, nor do they serve for quantification of saving.

[16] Value of expenditure saving on paired medicines. If extrapolated to total of medicines consumed, the saving would be EUR 100 million on HIC coverage and EUR 22 million on patient coverage. Broad application of Czech consumption level (i.e. also ATC groups in which SR consumes less) would still result in savings, namely EUR 22 million on HIP coverage and EUR 10 million on patient excess payment on paired medicines, and EUR 24 million and EUR 15 million if extrapolated to all medicines.

comparison from national institutions (Czech State Institute for Drug Control – SIDC and Slovak National Health Information Center – NHIC).

OECD data on medicine consumption at the level of ATC groups includes medicines dispensed in pharmacies, in hospitals, and over-the-counter, for all categories together. Compared to other countries, the Czech Republic does not have a unified methodology and reports numbers for medicines distribution and not medicines consumption. From the point of view of analysis, this is a positive risk, since the actual Czech medicines consumption can be lower than the distribution, and despite that, in some groups, it is still better than in Slovakia.

The comparison of the NHIC and SIDC (Czech State Institute for Drug Control) is based on the data on prescription medicines dispensed in pharmacies in terms of active substances[17]. Substances that are administered directly at outpatient clinics, or are only consumed in one of the countries, are not included in the comparison. Overall, the proportion of paired medicines in selected ATC groups constitutes 68 % of the Slovak consumption and 60 % of the HIP coverage.

Musculoskeletal system medicines are a single group, in which the results of two comparisons differ. This may be due to the high consumption of over-the-counter medicines in Slovakia, which are included in OECD data, but not in the comparison NHIC – SIDC. This group also includes common pain reliefs (ibuprofen etc.).

- **Measure: Consumption of over-the-counter medicines should be further analysed.** High consumption of medicines may have an adverse effect on health and cause other health issues, which consequently prolong the treatment.

Non-standard prescription

High consumption of medicines compared to other countries can, inter alia, be caused by non-standard prescriptions. If doctors who give more prescriptions to the patient than three quarters of their colleagues reduced prescriptions to their level, it would lead to savings in resources from health insurance of EUR 158 million. If only one tenth of the doctors modified their behaviour in this way, it would bring savings of EUR 59 million. The reason for extra prescriptions may be a tangible medicinal need, but also poor patient management, duplication of prescriptions, encouraged prescriptions and other irregularities.

Box 1: Identification of non-standard prescription

Analysis is based on data from individual prescriptions from eHealth in 2015. According to NHIC the total coverage for prescription medicines in 2015 was EUR 875.4 million. In eHealth[18] data on prescriptions amounting to EUR 841.1 million are available, which is 96.1 % of the overall coverage. The final saving was extrapolated to the total value of coverage according to NHIC.[19]

Each doctor has been assigned with a value of the indicator **average number of prescriptions per patient** per year. Each prescription was attributed to a doctor, who is its "originator". In the case of prescriptions with recommendation (used chiefly for replenishment of specialist prescribed medicines by the general practitioner), the recommending doctor (i.e. specialist) is the originator. In the case of prescriptions without recommendation,

[17] Active substances represent the lowest level of detail of ATC medicines classification (level ATC7). This level includes medicines with the same substance from different producers, in different pharmaceutical form and strength. This constitutes a much more precise comparison compared to OECD data, that are based on the topmost level – ATC1 (in short also identified as ATC). For presentation purposes, the results of ATC7 comparison were once again grouped to the level ATC1.

[18] Extract from 22 July 2016.

[19] Following the final launch of the electronic prescription (when 100% of the data available in eHealth) it will be possible to repeat the quantification using the complete database of prescribed medicines.

prescribing doctor is the originator.

The comparison does not take into account variations in morbidity of patients between doctors. However, the occurrence of more complicated cases and higher prescription is assumed in clinics and hospital departments. Thus only outpatient doctors were taken into account. Likewise, doctors with specific, less common specialisations probably treat more complicated diagnoses, therefore the 24 most common specialisations – with the highest consumption and costs of medicines – were included in the analysis[20].

In order to acquire standard prescription formulas, the values of the selected percentiles – 10th, 25th, 50th, 75th, 90th, and 99th percentile[21] and maximum value – were determined for each specialisation.

The following table contains prescriptions for certain areas, coverage of prescriptions prescribed and the quantification of the total possible saving. A table with the complete list of specialisations is given in Annex 2.

Table 12: **Prescriptions in certain areas (number of prescriptions), coverage thereof and quantification of saving (EUR million)**

specialisation	10%	25%	50%	75%	90%	99%	max	total of cover age	saving at 75%	saving at 90%
general medicine	1.00	1.00	3.07	8.70	10.98	15.85	33.70	144.50	17.55	5.30
diabetology, metabolism disorders	1.00	1.00	2.00	4.75	6.30	9.10	13.00	68.15	11.31	2.91
neurology	1.00	1.00	2.00	3.08	4.00	6.59	25.00	53.32	10.38	3.81
internal medicine	1.00	1.00	1.97	3.22	4.75	8.79	25.80	47.88	13.71	3.65
cardiology	1.00	1.00	2.00	3.57	5.00	7.74	14.00	45.04	13.30	4.26
psychiatry	1.00	1.50	3.00	7.56	10.50	15.51	18.30	41.24	7.68	2.17
immunology and allergology	1.00	1.18	2.29	3.58	4.51	7.78	11.00	32.22	4.37	1.58
general care – children and adolescents	1.00	1.29	2.72	3.50	4.24	5.73	14.66	27.14	2.56	0.84
dermato-venereology	1.00	1.43	2.16	2.82	3.43	4.61	10.67	23.08	5.93	3.87
total of 24 specialisations								795.56	151.95	57.04
extrapolated to the total value of coverage according to NHIC								828.00	158.15	59.37

Source: MF SR according to eHealth data

The majority of prescriptions are prescribed by general practitioners to their patients (even when their prescriptions were adjusted for replenishment of specialist prescribed medicines) and psychiatrists, diabetologists, rheumatologists, nephrologists and oncologists. Saving at reduction of prescription to the level of 75th percentile exceeds 25 % of the coverage with internal medicine specialists, cardiologists and dermato-venerologists, haematologists and infectologists.

- **Measure**: In 2017, **there will be a reduction in the expenditure on medicines of EUR 20 million thanks to the implementation of prescription limits for medicines prescribed by general practitioners and later on by specialized doctors**.

[20] 24 specialisations cover 95% of consumption and expenditure of the HIP.
[21] Percentile represents the threshold of the average number of prescriptions per patient, that is not exceeded by the relevant percentage of doctors. For example, if 75th percentile has the value of 5, it means that 75% of doctors prescribe, on average, less than 5 prescriptions per year to their patient.

- **Measure**: Planned **computerisation** of medical documentation and electronic prescription documentation will improve the doctor's awareness of the medicines that the patient is taking, and will reduce the number of interactions. This measure is the part of the prepared e-Health project and is currently partially implemented by HIC Dôvera.
- **Measure**: **Enhancement of competences of general practitioners** will create space for better patient management (gatekeeping). Enhancement of competences of general practitioners started in 2014, when general practitioners were became able to perform pre-surgery examinations, diagnostics and treatment of high blood pressure, and dislipidemia in 2015. Planned enhancement includes diagnostics and treatment of hyperuricaemia, type II diabetes and other diagnoses.
- **Measure**: **Introduction of standards** will remove defensive prescriptions. The Ministry of Health has drawn up a procedure for development of diagnostic and therapeutic procedures and is planning to develop the first rules in 2017.
- **Measure**: **Publishing of rankings of prescriptions by doctors** within their specialisation Currently, doctors are already receiving reports as to how their prescriptions differ from those of their colleagues (behavioural effect).

Cost-ineffective medicines

Reducing the price of potentially cost-ineffective medicines on the basis of rules of cost-efficiency would bring an estimated saving of EUR 120 million. Replacing them with a more cost-effective alternative would mean a saving of EUR 171 million. Central procurement of these medicines would release EUR 43 million. The cost efficiency of[22] medicines has been an essential criterion for a medicine to be included in the list of categorised medicines (medicines covered by public health insurance) since 2011. Medicines categorised in accordance with old rules, or referring to same reference group, did not have to comply with this test.

The presence of the cost-ineffective medicine in the categorisation provides for access to more cost-ineffective medicines with same indications.[23] Thus, the price of innovative medicines is not lowered by the arrival of generics and biologically similar substances.

Preliminary analysis pointed out the need to re-evaluate the cost efficiency of 147 medicines with the coverage of EUR 283 million in 2015. 43 of those (with the coverage of EUR 157 million in 2015), that constitute 10 active substances[24], have been subjected to more in-depth analysis. Only one substance (Interferone beta-1a) has been provisionally analysed as cost-inefficient, with health insurance coverage of EUR 10.2 million[25]. Price adjustment of 9 identified ineffective substances to the level of compliance with the condition of cost-efficiency will reduce the expenditure on evaluated medicines by EUR 86 million. Exclusion of these substances from the categorised list and use of alternative treatment would bring savings of EUR 122 million[26]. Transition to the alternative treatment would be utilized, once its suitability, in relation to the condition of the patient, is confirmed. Following

[22] Under Act No 363/2011, every newly categorised (normally covered by health insurance company) medicine must bring patient one year of quality adjusted life (quality adjusted life years, QALY) for additional expenses from public health insurance not higher than 24 times the average monthly salary. Medicines, for which the additional expenses for quality adjusted life year is no higher than 35 times the reference average salary, may be conditionally categorised for 2 years.

[23] Price of the new medicine is derived from the additional costs, compared to the existing medicine.

[24] Adalimumab/Humira, Entercept/Enbrel, Infliximab/Remicade, Dabigatranetexilate/Pradaxa, Bevacizumab/Avastin, Denosumab/Prolia, Ranibizumab/Lucentis, Interferone beta-1a, Trastuzumab/Herceptin, Erythropoetin.

[25] Another substance (Lucentis) was cost-efficient solely for one diagnosis for which it is used (coverage of EUR 7.9 million), third (Erythropoetin) complied with rules for conditional categorisation (coverage of EUR 21.2 million).

[26] Alternative treatment may be for example surgery or use of other medicine. The price of previous-generation medicines is usually significantly cheaper, therefore the saving in this scenario is high.

extrapolation to all identified medicines, the saving with alternative treatment is EUR 171 million and EUR 120 million with price adjustment[27].

The total coverage of 43 evaluated medicines, when applying maximum categorised pricing, would be EUR 198 million; the actual coverage was EUR 157 million. 5 medicines had advantageously negotiated the average unit cost in 2015. One medicine (with the active substance Herceptin) had a price 71 % price in relation to the categorised pricing. Yet, another 4 medicines (with substance Erythropoetin) were at 23 – 32 % of the categorised pricing[28]. There 5 medicines together lead to savings of EUR 36.4 million compared to categorised pricing. With aggregated procurement, the discount of 25 % of the categorised pricing is expected to be negotiated, which would mean a saving of EUR 35.7 million in the case of the remaining 38 evaluated medicines, compared to categorised pricing, and EUR 30.4 million compared to actually procured unit cost. By extrapolating to all identified medicines, the saving compared to the actual coverage is EUR 42.6 million.

The target is to increase value for money by exclusion of cost-inefficient medicines from the categorisation, or by decreasing the coverage thereof.

- **Measure:** In 2017, the cost of medicines will decrease by EUR 25 million thanks to the central procurement of medicines.
- **Measure: Medicines suspected of being cost-inefficient will be re-evaluated**. Producers will be asked to provide pharmaco-economic analyses. Medicines that do not comply with the condition of cost-efficiency will have their indications reduced, or will be excluded from the categorisation, and replaced with alternative treatment, once its impact on the condition of the patient is evaluated. Producers whose medicines do not comply with the condition at current prices may achieve compliance with the condition by lowering prices. In the transition period, from the request of the new pharmaco-economic analyses up to their evaluation, these medicines will be centrally procured.
- **Measure: Increased independence and professionalism of the categorisation commission, council and advisory group** thanks to the implementation of remunerated functions, recruiting selection process, as well as inclusion of foreign experts. Transparency will be increased by disclosing their meeting agenda, reasons for particular voting of individual members on the categorisation of new medicines, and potential conflicts of interest.
- **Measure: Compulsory collection of data on use and effects of new medicine** during the two-year temporary categorisation will enable the consequent request of new pharmaco-economic analyses based on the domestic data, which will provide more precise information on the cost-efficiency of medicine in the content of Slovakia[29].

Medicines covered by exemptions

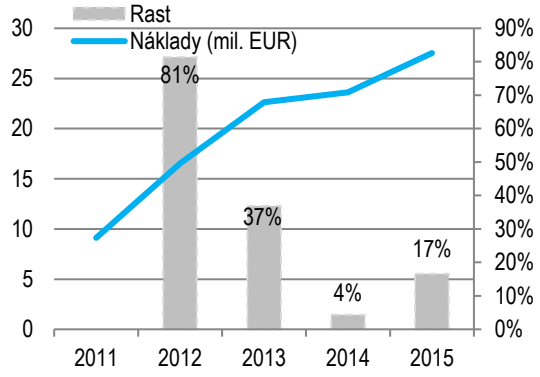
There is a significant increase in the cost of medicines covered by exemptions, especially since the implementation of a strict cost-efficiency criterion for categorised medicines in 2011. In 2015, they increased 17 % year-on-year and there was a threefold increase compared to 2011. Currently, the approval of exemptions is at the discretion of insurance companies and there are no uniform criteria or binding rules. In 2015, VZP spent EUR 6 642 per 1 000 insured persons, Dôvera EUR 3 693 and Union EUR 1 133.

[27] The ratio of the total coverage (EUR 283 million) to the analysed sample (EUR 157 million) is 1:80. The saving was extrapolated to all identified medicines conservatively, by adding 40%.
[28] Another 9 medicines with this substance have been procured at a price comparable to categorised medicines.
[29] Used for example in the Czech Republic. Highly innovative preparations are dealt with in Sections 40-44 of Decree No 367/2011. Current Slovak legislation creates conditions for this. However, the temporary 2-year categorisation of innovative medicines is not utilized much. Pharmaco-economic studies and new medicines pricing is based on the results of research, submitted by the pharmacological companies. They usually come from abroad and they do not necessary fully comply with the Slovak particularities.

- **Measure:** In early 2017, **binding rules for approval of exemptions, which are expected to reduce the coverage by EUR 10 million** (e.g. financial limit for patient, QALY limit at twice the value compared to the value when entering categorisation[30], financial limit for the insurance company) will be introduced in the amendment of Act No 363/2011 on scope and terms for coverage of medicines, medical devices and dietary foods in public health insurance. Without them, there is a risk that medicines that do not comply with the criterion of cost-efficiency and that are excluded from the list of categorised medicines will further be covered by exemptions in the system of public health insurance.
- **Measure: Transparency of the criteria** will increase patient awareness on the possibilities and will ensure equal access to these medicines for all patients.

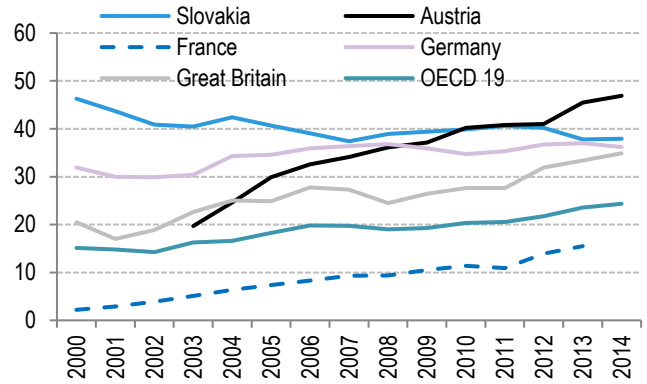
[30] It is appropriate to tie the setting of absolute upper limit for medicine coverage to the "age" of the medicine. Medicines that are the product of the most up-to-date research should have their limit specified higher than the older medicines.

Chart 9: Costs of medicines covered by exemptions



Source: Health insurance companies

Chart 10: Generics usage (proportion of the overall expenditure on medicines financed from PHI)



Source: OECD

Chart 9 above – grey is the growth, blue is the cost (in EUR million)

Generics:

An increase in the proportion of generics on the overall consumption of medicines brings savings to patients. Insurance companies cover the medicines up to the value of the cheapest alternative, the rest is covered by patient. Patient were able to save EUR 32 million in 2015 by choosing the medicine with the lowest excess payment.

Despite the high proportion of generics used in comparison with other OECD countries, the proportion of generics in the consumption of medicines in Slovakia is on the decline. It declined by about 10 p.p. since 2000. The trend is the opposite in other OECD countries. Of the referenced OECD countries, no country other than Slovakia saw a decline in the proportion of generics in the consumption of medicines[31] between 2000 and 2013.

- **Measure: Prescription for the active substance** without a specific medicine will eliminate the recommendations for more expensive original medicines or generics with higher excess payment.

Lack of availability of medicines

The lack of availability of some medicines in Slovakia has been caused by a failure to deliver medicines by the producers, as well as by the export of delivered medicines abroad[32]. Export is a legal activity and happens mainly due to the low price of medicines in Slovakia. The SIDC has the power to ban the export if there is a risk of a shortage of medicine. However, it seems that distributors are not fulfilling their notification obligation, and they export medicines without notifying the SIDC. This constitutes a violation of the law[33].

In order to improve the availability of medicines, the Slovak Ministry of Health has drawn up an amendment of the Act on medicines, which enters into force on 1 January 2017. Only producers and registration holders will be allowed to export medicines. Distribution companies will only be able to deliver medicines to pharmacies and will not be allowed to export them. Pharmacies will only be able to sell off medicines to the company they bought them from.

[31] Covered by the system of health insurance.
[32] For example vaccines, medicines for the treatment of epilepsy, Parkinson's disease, schizophrenia, blood clotting, and oncology medicines were unavailable in the past.
[33] Section (19)(a) of the Act No 362/2011 on medicines and medical devices.

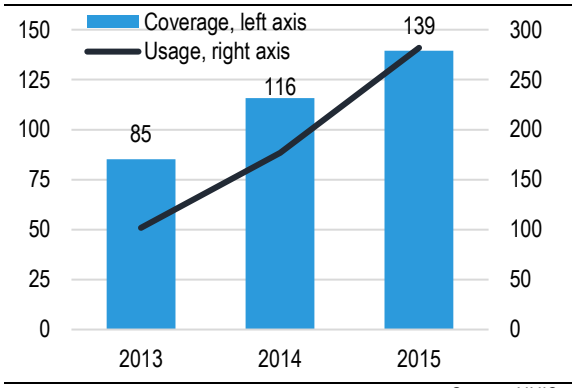
- **Measure**: For more efficient monitoring of exports, closer cooperation between **FD SR and SO SR**, **which will enable the exchange of information and use thereof as evidence**[34], is necessary. This possibility is not part of the current amendment.

Referencing of prices and the system of coverage of special medical material

Special medical material (SMM) costs rose significantly in recent years. The introduction of periodical referencing of international prices of SMM presents potential saving of EUR 45 – 55 million.

SMM covers invasive medical devices used almost exclusively in institutional medical care. Hospitals procure material individually, and once utilized on a particular patient, costs are covered by the health insurance companies. As with the price of medicines and medical devices, the price of special medical material are subjected to international referencing. However, the database of international prices was missing until July 2016 and referencing was not implemented in practice.

Chart 11: Coverage (in EUR million) and consumption (number of packaging in thousand) SMM



Source: NHIC

In July 2016, prices of pacemakers, stents and defibrillators used in cardiology institutes were referenced for the first time, based on the prices in Czech Republic. The referencing was expanded to all SMM procured by VZP in October 2016. The estimated saving of VZP is EUR 22.5 million per year; EUR 35 million when extrapolated to all health insurance companies. As of 2017, the price of SMM will also be referenced to prices in other countries (not only the Czech Republic). The estimated saving is EUR 45 – 55 million (when referencing is fully implemented).

Similar to medicines, SMM is sorted into sub-groups based on the purpose and functional characteristics. However, experts say, that total interchangeability within the sub-groups does not apply. At the same time, all SMMs are covered in full, not only up to the value of the cheapest alternative in given category – base functional type (BFT). Substitutability and coverage only up to the value of the BFT applies only to medicines and medical devices.[35]

Implementing the BFT and excess payments for SMM, in cases where patients select a more expensive alternative then the BFT, will enable a more cost-efficient system of coverage from the PHI. BFT will not be selected solely based on price, it will be based on medicinal standards and functionality criteria, taking age and

[34] Financial Directorate collects the data on export, in order to levy VAT. Statistical Office of the SR is the owner of the data. It is necessary to incorporate the provision of this information into Tax Act or Act on state statistics.
[35] Except for incontinence aids.

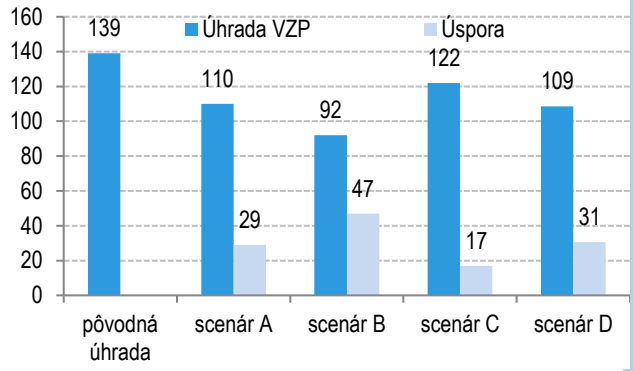
diagnosis of the patient into account. One necessary prerequisite is the evaluation of the list of categorised SMMs and its arrangement into groups and sub-groups, so that the principle of substitutability is applicable, as in the case of medicines and medical devices.

Box 2: Proposal to modify the system of coverage of SMM

The analysis assessed different scenarios of selection of the base functional type: by how much the coverage of the health insurance company would be reduced, provided that the aids are covered up to:

- *(scenario A) lowest health insurance company coverage (HICC) specified by the categorisation, for a particular sub-group. Saving of EUR 29 million was quantified.*
- *(scenario B) lowest actual coverage in a particular sub-group. Saving of EUR 47 million.*
- *(scenario C) second lowest HICC specified by the categorisation, for a particular sub-group. Possible saving of EUR 17 million.*
- *(scenario D) second lowest actual coverage in a particular sub-group. Scenario takes into account medicinal need to define BFT of sufficient quality, not necessary the lowest item in the category. Saving of EUR 31 million.*

Chart 12: Estimate of the impact of the modification of the system of coverage of SMM (in EUR million)



Source: NHIC

Chart 12 above – blue represents the PHI coverage, light blue represents the saving. Columns are: original coverage, scenario A, scenario B, scenario C and scenario D

Prices are based on the list of categorised SMM 1 April 2016 – 30 June 2016, and on data on consumption of SMM for 2015 from NHIC. The actual average coverage per unit of SMM has been determined from the data on consumption. Consequently BFT coverage for each sub-group was established based on the A, B, C, D scenarios. If in scenarios A, C, D the actual average coverage of individual items was lower than the coverage laid down by categorisation, the actual coverage was taken into consideration. Lastly, the reduction of the total coverage for referred scenarios was quantified.

Analysis was based on the classification of SMM into sub-groups, as stated in the categorisation valid in 2016. Hence this is merely an estimated impact of the implementation of the BFT. After the BFT have been set based on the criteria listed above (total interchangeability within the sub-groups, with the emphasis on medicinal standards and functional criteria, taking into account age and diagnosis of the patient), it is necessary to repeat the quantification.

- **Measure**: In October 2016, **the prices of the SMM will be referenced on the basis of internal benchmark of the VZP and Czech prices**, bringing **saving of EUR 25 million for the VZP and EUR 35 million for the sector as a whole** (in 2017) **Measure**: In January 2017, **the database of the international pricing (coverage prices) of the SMM will be expanded with more countries and referencing of the SMM will be repeated**.
- **Measure**: During 2017 – 2018 **base functional types, which will become threshold for the coverage of individual SMMs** will be introduced.

Modification of coverage system of incontinency aids

Incontinency medical aids have a unique manner of coverage, compared to the medicines and other medical devices. All aids are covered by the insurance company in full, for each patient, up to the budget corresponding to the patient's diagnosis. The patient himself/herself decides on the choice of the aid that s/he will use[36]. Modifying the coverage system to the standard with BFT and excess payments would result in savings of EUR 4.5 million.

In 2015, health insurance companies covered the cost of incontinence medical aids for patients amounting to EUR 50 million. In addition, patients used EUR 4 million to buy more aids from their own resources. Referencing of the medical devices was done for the first time in 2016[37]. That is expected to save EUR 2.3 million on coverage of incontinency aids, provided that the consumption will be the same as in 2015.

Box 3: Proposal to modify the coverage system of incontinency aids

Three scenarios were considered in the analysis

- *In each of the seven groups, product with the lowest price was set as base functional type (BFT).*

  Saving is EUR 28.7 million. This scenario is considered realistic. A number of groups contain a higher number of diverse products, and the functional characteristics of the individual products within a group are not always the same (different absorbency, measurements, etc.) Thus, products are not fully interchangeable. If the coverage system is modified, a new categorisation and creation of smaller, more homogenous groups of medical products would be necessary.
  - *If the BFT price is set to the average of price of a given category, the saving is EUR 4.8 million.*
  - *The existing groups were divided to four sub-groups based on price, and in each one, the product with the lowest price was set to be the BFT. This scenario represents a simple simulation of the new categorisation. The saving is EUR 4.5 million, i.e. 9 % compared to the original coverage of the insurance companies.*

Prices are based on the list of categorised medical devices (MD) 01/07/2016 – 30/09/2016, and on data on consumption of the MD for 2015 from NHIC. The evaluation of the scenario and quantification of the saving corresponds to the description in Box 2.

The saving in each scenario represents a transfer of the coverage from health insurance companies to patients. However, it should not translate into patient excess payment in full. A reduction in prices specified by the producer and a modification of the structure of consumption of incontinence aids towards the less expensive products, with the price close to the base functional type, is expected. The volume of aids covered by patients in full should decrease significantly.

[36] Health insurance companies provide coverage for these aids for patients with level 2 incontinence up to EUR 14.77 per month, limit for patients with level 3 incontinence is set to EUR 51.94 per month. In case of level 3 incontinence pads and patient underpads, there is also the quantity limit of 60 pieces per month. We consider the quantity limit restrictive. We recommend to remove it. Aids are not covered by the health insurance, in case of level 1 incontinence.

[37] http://www.finance.gov.sk/Default.aspx?CatID=10361.

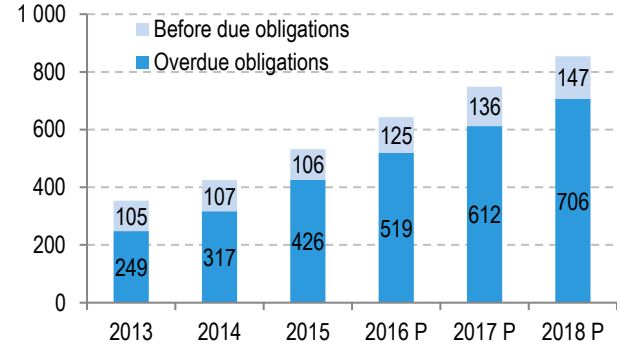
- **Measure**: **Referencing of the prices of medical devices and improvement of review actions will result in a saving of EUR 15 million** in 2017.
- **Measure:** The standard system for coverage with specified base functional type and patient excess payments shall be implemented.

3.2 Medical care facilities

Despite repeated deleveraging, state hospitals continue to fall into debt. In the first half of 2016, the financial obligations of the 13 biggest hospitals of the Slovak Ministry of Health amounted to[38] EUR 591 million (EUR 472 million of overdue obligations and EUR 119 million by the deadline). Compared to recent years, indebtedness in 2015 accelerated to EUR 108 million per year, with the biggest increase since 2011. At the current rate of indebtedness, the hospitals' obligations may reach EUR 750 million in the coming year.

Since 1998, the state spent EUR 1 423 billion on the deleveraging of various hospitals. The plans to prevent indebtedness did not bring any improvement in fund management. During the last discharge of debt in 2011, the state had taken over obligations of EUR 310 million.

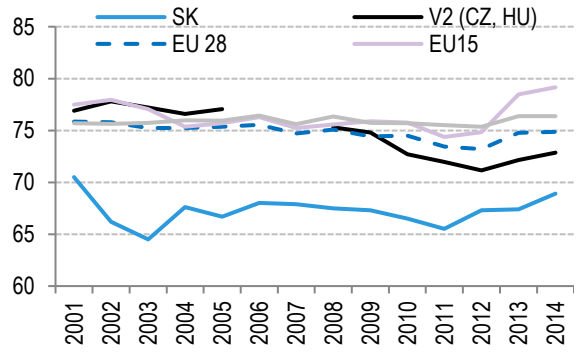
Chart 13: Obligations of teaching hospitals and university hospitals (in EUR million)



p – linear projection

Source: IFP according to MH SR

Chart 14: Utilization of emergency hospital beds (%)



Source: OECD

In the case of V2 countries, no data is available for CZ for 2006 and 2007.

Further deleveraging is conditioned by improvement in the fund management of the hospitals. Economic and performance targets as well as gradual implementation deadlines shall be periodically monitored and evaluated. Monitored operation indicators shall include:

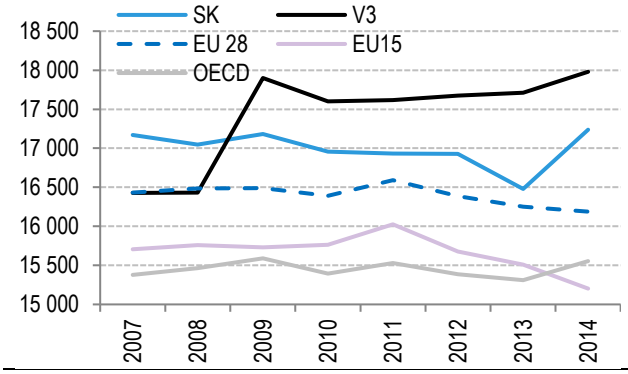
- occupancy of the hospital beds;
- duration of hospitalisation;
- number of hospitalisations per one doctor and nurse;
- purchase prices of goods and services.

An important prerequisite for preventing indebtedness is the determination of corrective measures and sanctioning mechanisms for cases where the hospital does not improve its funds management. For example,

[38] University Hospital Bratislava; L. Pasteur University Hospital Košice; University Hospital Martin; Children's Teaching Hospital with Policlinics Bratislava; Children's Teaching Hospital Košice; Children's Teaching Hospital Banská Bystrica; F.D. Roosevelt Teaching Hospital with Policlinics Banská Bystrica; Teaching Hospital Trnava; Teaching Hospital Trenčín, J.A Reiman Teaching Hospital with Policlinics Prešov; Teaching Hospital with Policlinics Žilina; Teaching Hospital with Policlinics Nitra; Teaching Hospital with Policlinics Nové Zámky.

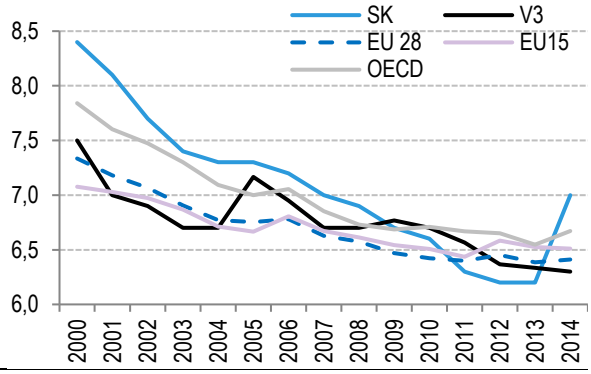
personal liability of directors, supervisor of the Ministry of Health present in the hospital, or implementation of some form of receivership by professional managers.

Chart 15: Number of hospitalisation in emergency care (per 100,000 population)



Source: OECD

Chart 16: Average duration of hospitalisation in emergency care (number of days)



Source: OECD

One of the reasons for bad funds management and indebtedness is in particular the inefficiency of the service. There is a long-term low utilization of emergency hospital beds in Slovakia. The average occupancy of emergency beds is only 68.9 %, 76.4 % in OECD countries and 79.2 % in EU 15. At the same time, Slovakia still has more hospitalisations than the average of OECD countries and EU15. The average duration of hospitalisation has decreased by more than 2 days since 2000, from 8.4 to 6.2 days in 2013, and is below the average of the other EU countries[39]. The high number of hospitalisations in comparison with other countries may be linked to the low proportion of the same-day surgery in Slovakia. High inefficiency is present predominantly in the biggest hospitals – teaching hospitals and university hospitals (THUH)[40].

- **Measure:** Thanks to **the optimizing of operation, processes and procurement, hospitals (organisations subordinated to the Ministry of Health) will save EUR 31 million.**
- **Measure: the Ministry of Health** is working on **the optimised structure of institutional medical care** (Project Optimalizácia siete (Network optimising)), based on the calculations of occupancy of hospital beds, average duration of hospitalisation, and evidence-based hospital referral, i.e. minimum number of procedures per department or the clinics required to provide statistically safe care.
- **Measure:** In order to optimise efficiency of use of resources, **staff target numbers and minimum equipment security of the providers shall be adjusted** during 2017.
- **Measure: Hospitals that will not be covered by the new network of emergency hospitals shall be re-profiled to after-care institutes, outpatient facilities or outpatient clinics**. A proposed new network is expected in the autumn of 2016.

Optimising the operation of teaching hospitals and university hospitals

With better fund management of the THUH, **achieved through optimising of number of hospital beds and number of doctors and nurses, as well as cost-efficient procurement of energies and services, would offer a potential saving for hospitals of EUR 84 million per year.** Optimising the number of hospital beds means the liquidation of the excess capacity, given the actual occupancy of the departments, and reduction of the

[39] In 2014 it increased significantly to 7 days, which is above the level of V3, EU and OECD. A change of methodology could have significantly contributed to this modification (psychiatric patients have been included since 2014), which caused a break in the time series.
[40] We are working on the assumption that these are the most heavily indebted hospitals.

duration of hospitalisation. Actual demand for the doctors and nurses is subject to the number of hospitalisations per doctor and nurse.

The Ministry of Health has drawn up a separate project to address this issue – Transparentný governance a Optimalizácia – Stratifikácia (Transparent Governance and Optimising - Stratification), implementation of which has already begun (detail of the project in Annex 5).

Box 4: Analysis of the operation of the largest Slovak hospitals

The analysis focused on the group of 18 hospitals subordinated to MH SR and MD SR, University Hospital in Bratislava (UHB) has been divided into 5 individual hospitals – Kramáre, Staré mesto, Ružinov, Petržalka and Podunajské Biskupice. Additionally, the following hospitals were analysed – Central Army Hospital Ružomberok (CAH RK), L. Pasteur University Hospital Košice (LPUN KE), University Hospital Martin (UH MT), Children's Teaching Hospital with Policlinics Bratislava (CTHP BA), Children's Teaching Hospital Košice (CTH KE), Children's Teaching Hospital Banská Bystrica (CTH BB), F.D. Roosevelt Teaching Hospital with Policlinics Banská Bystrica (THP BB), Teaching Hospital Trnava (TH TT), Teaching Hospital Trenčín (TH TN), J. A. Reiman Teaching Hospital with Policlinics Prešov (THP PO), Teaching Hospital with Policlinics Žilina (THP ZA), Teaching Hospital Nitra (TH NT), Teaching Hospital with Policlinics Nové Zámky (THP NZ). Operation indicators at the level of departments, namely occupancy of the hospital beds, duration of the hospitalisation, number of the hospitalisations per doctor and nurse, and at the level of hospitals, procurement of goods and services, were evaluated. Children's Hospitals were evaluated as a separate group, in which separate targets (benchmarks) were set, since they represent a separate group with specific procedures and patient needs, compared to the other hospitals.

Table 13: Average operation indicators at the level of hospitals

	UHB -KR	UHB – RU	UHB – PE	UHB – SM	UHB – PB	TH TT	TH NT	THP NZ	TH TN	THP ZA	TH MT	THP BB	UH RK	UH KE	THP PO	CTH P BA	CTH BB	CTH KE
Occupancy (%)	72	68	67	61	77	71	77	66	69	80	64	64	62	59	59	57	57	58
Duration of hospitalisation (day)	9	9	13	9	21	6	7	7	7	10	7	6	5	7	16	6	5	7
# of hospitalisations per doctor	130	123	102	167	77	143	232	208	190	197	180	159	232	147	165	109	99	84
# of hospitalisations per nurse	52	73	56	58	37	130	97	104	79	96	90	147	95	60	56	73	66	50

Source: MF SR according to NHIC and UHB data

The average occupancy of hospital beds in the analysed hospitals is 66 %, whereas children's hospitals are only 57 % occupied. The average occupancy of the individual departments in the hospitals varies significantly (from 3 % – oncology department in surgery and spondylosis surgery to 108 %[41] – cardiology ICU department) and clearly shows the inadequate administration of hospital beds in the individual departments. THP ZA is the hospital with highest utilisation (80 %), Children's Teaching Hospital Bratislava, on the other end, is the least utilized (57 %). The a**verage duration of hospitalisation** is 10 days in THUH (from 1 day – paediatric ICU to

[41] Departments with occupancy above 100% probably utilize hospital beds formally belonging to other departments.

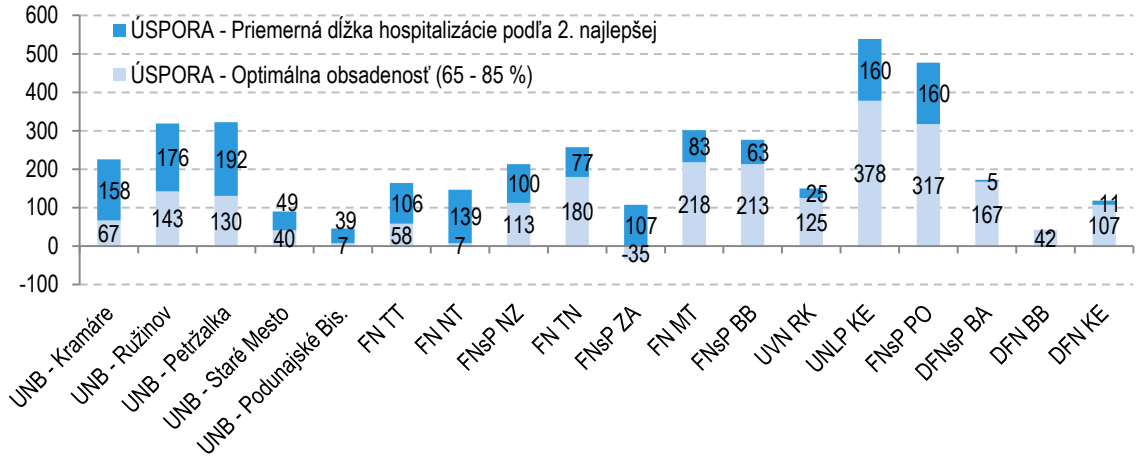
152 days – treatment for drug addicts). On average, CTH BB has the shortest hospitalisations (5 days), whereas the longest are in UHB Petržalka (13.2 days).

There are 171 hospitalisations per doctor per year, with most in the CAH RK (232 hosp.) and the least in the UHB Podunajské Biskupice (77 hosp.). The least hospitalisations per nurse are also in UHB Podunajské Biskupice (37 hosp.), with the most in the THP ZA (146 hosp.). There are **78 hospitalisations per nurse** on average.

EUR 2.3 million a year could be saved with the optimal occupancy of the departments, thanks to the reduction of hospital beds by 1 301 (11.5 % of all hospital beds). According to medical experts, optimal occupancy is between 65 % and 85 % of the capacity of different departments, so that the health of the patients is not endangered. This saving is based on the annual costs per hospital bed of EUR 1 750 (Ministry of Health expert estimate)[42]. Analysis was carried out at the level of departments and clinics and it also factors in the increase in hospital beds in hospitals where current occupancy is higher than the recommended target.

By shortening hospitalisations to the level of second best value out of the analysed hospitals provides potential annual saving of additional EUR 1.7 million, based on optimising hospital beds by another 943 hospital beds (8.1 % of all hospital beds). [43]. The duration of hospitalisation is evaluated at the level of departments, separately for children's hospitals; the costs per hospital bed per year are the same, EUR 1 750.

Chart 17: Estimate of saving when optimising the number of hospital beds at the level of hospitals (in EUR thousand)



Source: Processing of the data from NHIC

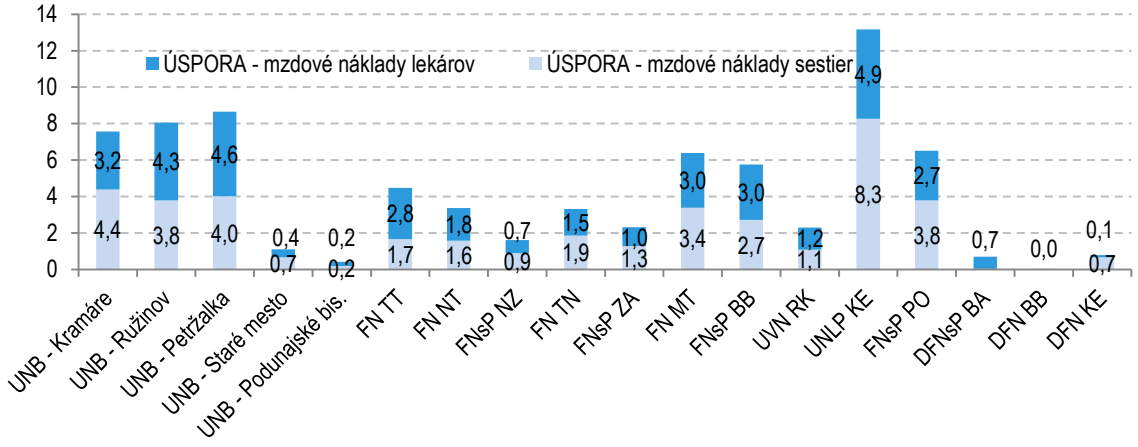
Chart 17 above – blue is the SAVING – average duration of hospitalisation based on 2nd best. Light blue is the SAVING – optimum occupancy (65-85 %). Columns are: UHB – Kramáre, UHB – Ružinov, UHB – Petržalka, UHB – Staré Mesto, UHB – Poddunajské Biskupice, TH TT, TH NT, THP NZ, TH TN, THP ZA, TH MT, THP BB, CAH RK, LPUN KE, THP PO, CTHP BA, CTH BB, CTH KE

[42] Operating costs per hospital bed in the existing department, excluding personnel costs.
[43] Conservative assumption that occupancy of the hospital beds is at the level of current values, not at the level of stated targets (65 – 85%).

Optimising the number of hospital beds gives potential for reduction of personnel and annual savings of EUR 2.1 million on doctor salaries and about EUR 1.1 million[44] on nurse salaries. Using conservative assumptions on personnel target numbers (17 occupied hospital beds per doctor and 18 per nurse in double-shift service), analysis identified excess capacity of 67 doctor positions and 62 nurse positions[45].

Achieving the second-best result in the number of hospitalisations per doctor and nurse in the individual departments would bring additional personnel saving of EUR 34 million per year on doctors, and EUR 39 million per year on nurses. Excess capacity represents 12 % of the current set-up (2 285 nurse positions and 1 066 doctor positions). The number of admissions per doctor/nurse is evaluated at the level of departments, separately

Chart 18: Estimate of personnel saving at the level of hospitals (in EUR million)



for children's hospitals.

Source: Processing of the data from NHIC

Chart 18 above – blue is the SAVING – salary costs of doctors. Light blue is the SAVING – salary costs of nurses. Columns are: UHB – Kramáre, UHB – Ružinov, UHB – Petržalka, UHB – Staré Mesto, UHB – Poddunajské Biskupice, TH TT, TH NT, THP NZ, TH TN, THP ZA, TH MT, THP BB, CAH RK, LPUN KE, THP PO, CTHP BA, CTH BB, CTH KE

By optimising the number of hospital beds and number of doctors and nurses, as well as by cost-efficient procurement of energies and services, UHB could save EUR 28 million per year (35 % of the total saving of all THUHs). Approximately EUR 1 million relates to the reduction of the number of hospital beds, of which about two thirds (EUR 0.6 million) relate to the reduction of the average duration of the hospitalisation to the level of second-best hospital. Based on optimising the number of hospital beds and average number of hospitalisations per doctor and nurse, UHB has excess capacity of 398 doctor positions (17 %) and 761 nurse positions (15 %). The overall saving on personnel costs is EUR 26 million. UHB can save EUR 1.7 million annually using more cost-efficient procurement.

[44] Annual salary costs per doctor are on average EUR 32 000 and EUR 17 200 per nurse.

[45] Target numbers differ from one department to another. Specifically from 3 to 17 occupied hospital beds per doctor on a day shift, 9 to 10 per nurse on a day shift, and 15 to 18 on a night shift (as much as 20 patients per nurse in the speech therapy department. However, this is the only department out of 43 with such target number. The remaining 42 departments have target number of 15 – 18 patients per nurse, therefore we consider 18 as the maximum value of the target number). By utilizing the highest target numbers, the final count of the redundant personnel is lower compared to the utilization of lower target numbers.

By procuring energy at market prices (currently at a long-time low) and services at the level of average contract price in 2015, THUHs can save EUR 3.1 million per year. The analysis evaluated contracts on the procurement of electricity, gas, laundry and cleaning. Each category relates solely to selected hospitals, as not all of the hospitals procure these services[46], or, the procurement contracts were not publicly available or provided to the Ministry of Health. A detailed structure of potential saving of the THUHs is provided in Table 13.

Hospitals spend about 14 % of their operating costs on procurement of services and energies (3 % of the operating costs on energies and 11 % of the operating costs on services). Despite the fact that the item is often identical, as in the case of energy, unit prices in different hospitals vary enormously (unit price of 1 MWh of the electric energy, excluding tax, is between EUR 33 and EUR 74). Comparing unit prices is often made difficult by unclear addenda and inconsistently defined prices.

Table 14: Estimate of saving in 2015 from achieving the best contract price

in EUR thousand	TOTAL	UHB	TH TT	TH NR	THP NZ	TH TN	THP ZA	TH MT	THP BB	LPUH KE	THP PO	CTHP BA	CTH BB	CTH KE
Electricity	383	167	4	7	0	10	46	3	0	140	N/A	0	0	8
Gas	462	0	2	42	65	N/A	1	75	88	184	N/A	0	0	5
Laundry	145	0	0	24	N/A	75	N/A	14	0	N/A	28	N/A	N/A	3
Cleaning	2,138	1,492	N/A	132	0	169	N/A	N/A	N/A	345	N/A	0	N/A	N/A
Total	3,128	1,659	6	205	65	254	47	92	88	669	28	0	0	16

Source: Contracts of the THUHs

In order to make the procurement of energies and services and medicines and medicinal material more efficient, the hospitals were asked to terminate the contracts currently in force and to procure new suppliers. The individual steps of this process are supervised by the Ministry of Health in order to ensure complete new procurement of the energies and services suppliers. Each hospital was provided with current market prices of energies and average market prices of selected services and medicines and SMM purchases. This process started with internal referencing of the prices of medicines and consumable material. In the course of 2016, hospitals were provided with a price list of medicines, showing the maximum values for which individual items are to be purchased. If all hospitals purchased medicines at the level of the lowest achieved prices, the saving would be EUR 6.5 million. On the other hand, the poor fiscal discipline of certain hospitals can present a serious obstacle in price negotiations and the final negotiated price can be increased by what is known as risk premium.

Overall optimising of the operation and procurement will be done in several steps.

- **Measure**: In the course of 2017 **the number of hospital beds shall be optimised to the real needs and the occupancy of the departments**. This process falls within the remit of, and will be implemented by, the Unit for management of the subordinate organizations established by the Ministry of Health in June 2016. It has been created with a view to implementing network management of the hospitals.
- **Measure**: Maximum values for the parameters of operating contracts in the organisations subordinated to the Ministry of Health shall be set, and effective measures for eliminating disadvantageous contracts shall be implemented.
- **Measure**: Proposal for a **system of mutual benchmarking of parameters of the operating contracts** in the organisations subordinated to the Ministry of Health.

[46] Some hospitals have proprietary capacities for these services.

DRG system implementation

Experience from abroad confirms that the implementation of the hospital payment mechanism DRG (Diagnosis-Related Groups, a financing system based on diagnosis) enhances the transparency of the system and, unlike other payment mechanisms, has the potential to increase efficiency of the fund management of hospitals. In order to achieve higher cost-efficiency it is essential to set the system up correctly. Although in different countries DRG systems have been superseded by other financing systems, implementation of DRG leads to lower costs in many countries (Australia, Great Britain, Spain[47]), or to their growth being slowed (USA)[48].

To ensure that Slovak DRG does not preserve current financial flows to the hospitals without the pressure to increase efficiency, a methodology for calculating base rates must be defined, and the manner of ensuring their cohesion, once the system is launched. According to the information published by the Health Care Surveillance Authority, the concept of DRG in Slovakia envisages the implementation of five base rates for different types of hospitals. It has not yet been defined whether and how the base rates are to be unified. Different rates mean that hospitals will continue to receive significantly different payments for the same procedures. Hospitals with higher base rates would thus not be motivated to provide medical care efficiently. It is also unknown whether capital expenditure of the hospitals and costs for specialised procedures (such as CT, MRI, laboratory procedures) will be included in the payments through DRG. Inclusion of examinations would motivate hospitals to keep an eye on the justification of individual procedures. Inclusion of investments would gather the pressure on efficient funds management.

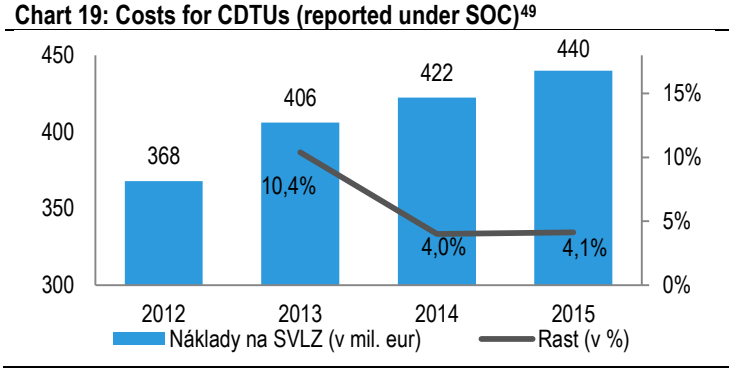
- **Measure*:* The introduction of DRG** will strengthen the hospitals' direct responsibility for costs, and will introduce transparent and just payments for procedures.

3.3 Radiology examinations and laboratory procedures

Common diagnostic and therapeutic units (CDTU) are clinics providing diagnostic and therapeutic procedures. These are outpatient units with no hospital beds, providing medical care to the insured persons send by the outpatient departments or departments with hospital beds. They include in particular:

- Radiology examinations (e.g. ultrasound, RTG, CT, MRI, PET examinations),
- Laboratory procedures (e.g. histology, immunology, bacteriology procedures).

Chart 19: Costs for CDTUs (reported under SOC)[49]



[47] Per unit prices decreased and the growth of the total costs slowed down.
[48] WHO, Diagnosis-Related Group in Europe, http://www.euro.who.int/__data/assets/pdf_file/0004/162265/e96538.pdf.
[49] Financially approved procedures. Actual costs may be higher, due to inconsistently recorded costs of the HIC Dôvera. HCSO: Správa o stave vykonávania verejného zdravotného poistenia za rok 2015 (Report on performance of public health insurance for 2015), Annex 11, available at http://www.udzs-sk.sk/documents/14214/71781/VE_11_2016_Spr%C3%A1va+o+stave+vykon%C3%A1vania+PHI+za+rok+2015.pdf/6f910a4e-fe6e-4cfd-9935-9872e31042fa

Source: HCSO

Chart 19 above – blue represents CDTU costs (in EUR million), grey is the growth (%)

In case of the CDTUs, over-consumption possibly occurs due to induced consumption, defensive prescription, insufficient clinical examinations[50] or the lack of sharing of examination results, mainly as a result of the inadequate involvement of doctors in the cost-efficiency of the examinations.

Insurance companies are trying to motivate indicating doctors to help ensure cost-efficiency, for example by higher payment if they comply with particular criteria, e.g. more rational utilization of CDTU costs on patients. Those criteria are evaluated against the benchmark, which is calculated on the basis of all providers of that particular specialisation. Insurance companies also carry out reviews and, they are not obliged to pay for the procedure if it has been indicated incorrectly. There is currently inadequate control of the consumption of the CDTU procedures by the insurance companies. The lack of standard procedures (*guidelines*) is one of the causes. There are no uniform criteria for fixing contract volumes for medical care providers of for fixing prices by the insurance companies[51]. This is largely the result of negotiations between the relevant parties. Due to its dominant position, VZP has a considerable influence on prices and contract volumes.

- **Measure**: In 2017, a **EUR 3 million decrease in costs on radiology examinations and laboratory procedures is expected, thanks to the implementation of limits for general and specialised outpatient medical care**.

Radiology – CT and MRI

A potential annual saving of EUR 25 million was estimated as a result of the reduced price per CT and MRI procedures according to the VZP model (extrapolated to all the HIP). The average price of a CT scan could decrease by 22 %; the average price of MRI by 18 %. In addition, with the reduction in the frequency of examinations prescribed by doctors above the 90th percentile and 75th percentile in their specialisation, there were estimated potential annual savings of EUR 10 million and EUR 26 million, respectively.

Almost half of the radiology costs from public health insurance is spent on CT and MRI examinations, with the cost in recent years rising significantly. The estimated costs of the health insurance companies for these examinations, including the associated items (medicines or material) and contrast agents, were EUR 124 million in 2015 – EUR 72 million for CT expenditure and EUR 52 million for MRI expenditure.

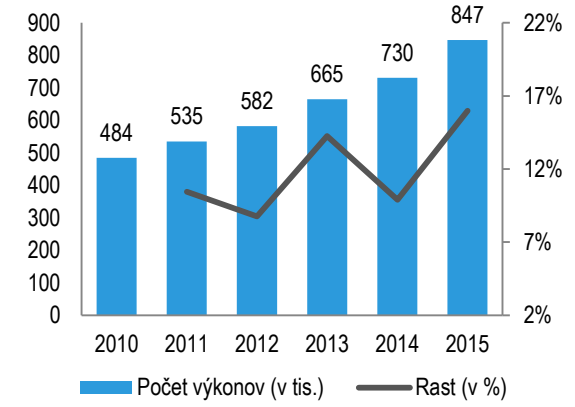
The number of CT and MRI examinations between 2010 and 2015 grew by double digit figures each year (compound annual growth of 11.8 % in the case of CT and 11.3 % in the case of MRI). According to OECD data, in Germany and Netherlands, countries with comparable medical care systems, the growth was 5.1 % in the case of CT scans and 5.8 % in the case of MRI examinations[52], in recent years. Relatively rapid growth of number of examinations in recent years often was concentrated in regions with new CT/MRI units, without any equivalent reduction of number of examinations in the surrounding regions. This indicated the existence of supply induced consumption. This effect can be partially restricted by stopping or slowing down the current rate of the expansion of the network of providers.

[50] Clinical examination is the sum of procedures of the doctor in order to detect the diagnose. It includes for example clinical history and physical examination (examination using doctors senses)

[51] When it comes to volumes in the case of CT and MRI examinations, VZP is planning to take into account the operating hours of the site and the type of site in particular. Nevertheless, these parameters do not reflect objective medical care need. Unit prices are determined by material and technical equipment and the personnel of the site (permanent operation has bigger significance in the case of CT; the performance of the apparatus has bigger significance in the case of MRI).

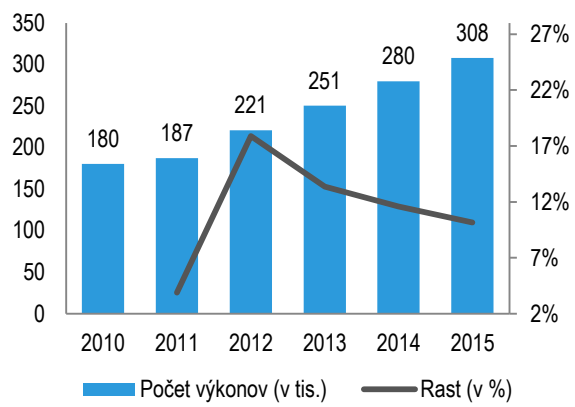
[52] Based on data availability, 2005-2012 was used in case of Germany and 2008-2014 in case of Netherlands.

Chart 20: Development of number of CT procedures*



Source: NHIC

Chart 21: Development of number of MRI procedures



Source: NHIC

** Overall number of examinations is lower as one examination may involve more than one procedure.*

Chart 20 above – blue represents number of procedures (in thousand) and grey represents the growth (%). Chart 21 above – blue represents number of procedures (in thousand) and grey represents the growth (%).

VZP had contracts with 79 CT devices (in 51 locations) and 44 MRI devices (in 24 locations) in 2015. Most of the procedures were carried out as a result of indications by outpatient care providers (62 % of CT, 80 % of MRI). The rest refer to institutional providers[53]. University Hospital Bratislava, with 4 devices, is the biggest provider of CT scans with a 6 % market share. Pro Diagnostic Group, with 8 devices, is the biggest provider of MRI examinations with more than one-third market share.

The cost of CT and MRI examinations in Slovakia is relatively high and reducing them would save EUR 25 million. The profitability of private providers[54], along with the price comparison with the Czech Republic, is creating space for the reduction of price per CT procedure of approximately 25 % and 0-25 % per MRI procedure (based on the type of procedure)[55]. After inclusion of the costs of the additional items (medicines, material) and of the admission of the contrast agents, price of each examination could be reduced by 22 % (CT) and 18 % (MRI). However, the resulting prices depend on the new contract and addenda negotiations between insurance companies and medical care provider[56]. The estimated saving in 2017 is EUR 10 million, due to the above-mentioned long-term contracts currently in force, which do not allow the immediate implementation of the lower prices.

Hospitals should utilize imaging devices in a more efficient way[57], so that the reduction of the price does not have a negative effect on their fund management (e.g. by providing higher number of examinations to patients who are not hospitalised). In comparison with private providers, a number of public hospitals use less capacity of their CT and MRI, and as such are not using the contract volumes agreed on with the insurance companies in full.

[53] Procedures provided to patient hospitalised in the hospitals under inpatient care.
[54] Some of the providers achieved a profit margin of more than 40% in 2015.
[55] Conclusions of the internal analysis of the Všeobecná zdravotná poisťovňa (VZP) of 10 September 2016.
[56] Provided that all health insurance companies had already agreed upon the proposed reduction of the costs with the providers for 2017, the reduction of the unit prices would be EUR 24.8 million (taking into consideration the structure of the procedures and numbers of examinations in 2015). The saving does not have to materialise immediately, however, since a number of providers have contracts for several years ahead. In 2015, VZP had approximately 8% of the CT procedures and 53% of the MRI procedures contracted through the providers, whose current contracts end on 31 December 2018.
[57] CT and MRI sites in general are among the profitable sites, and they partially offset the losses of other departments and sites.

Lowering the frequency of examinations prescribed by the doctors who prescribe the most by 10 % could save an estimated EUR 6.7 million per year on CT and EUR 3 million on MRI[58]. The analysis evaluated the distribution of the number of prescribed CT or MRI examinations relative to the number of doctor appointments (by specialisations) in 2015. If the doctors prescribing more examinations per 1 000 patients (one-off patients only) than the 90th percentile in their specialisation, reduced the prescription to its level, the number of the examinations would be reduced by 11.7 % in the case of CT and 6.4 % in the case of MRI. By reducing the prescription of one quarter of the doctors who prescribe the most to the level of the 75th percentile, an estimated annual saving of EUR 18.1 million in the case of CT and EUR 8.3 million in the case of MR could be achieved, considering the reduction of number of examinations by 31.3 % and 17.9 % respectively[59]. It is appropriate to refine this analysis with PCG[60] data, since some variability of prescription is medically justified (e.g. due to different morbidity of the patients of the doctor).

One example of the over-consumption of imaging examinations is duplication. There are cases in which one insured person takes the same examination with the same diagnosis again within 30 days. There were approximately 3 000 such examinations with MRI in 2015 (almost 1 % of the total number, which accounts for almost EUR 500 000). Some of these examinations are indeed medically justifiable (for example, when it is necessary to monitor the progress of the disease). For that reason, cases in which the examination has been repeated within 30 days and has been prescribed by a different doctor have been excluded, , as there is a presumption, that the insured person requested a second opinion. There were approximately 470 such examinations with MRI in 2015 (0.15 % of the total number, which is approximately EUR 80 000). Such over-consumption of this sort could be eliminated by computerisation and sharing of results of the examinations between doctors.

- **Measure**: **New prices per CT and MRI procedure shall be applied when new contracts between providers and health insurance companies are signed**. In 2017, a **saving of EUR 10 million will be achieved due to the reduction in prices and limits; negotiations started in autumn 2016.**
- **Measure**: **Computerisation and sharing of results of the examinations** between doctors will contribute to the reduction of the number of examination duplication.
- **Measure**: PCG parameter will be included in the **analysis of the variability of the prescription** of examinations and will **take into account the morbidity of the patient portfolios of the individual doctors.**
- **Measure**: **Radiology standards** will be introduced, which will contribute to the screening or diagnostics efficiency, and enable better inspection of the prescription by the insurance companies' review doctors. These standards must be updated regularly.

Laboratory procedures

The potential annual saving of laboratory procedures, with reduced frequency of prescriptions of procedures by doctors who prescribe above 75th percentile or 90th percentile in their specialisation is EUR 27 – 65 million.

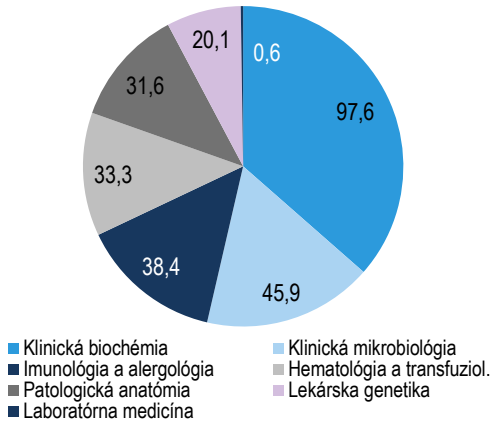
The costs incurred by the health insurance companies on laboratory procedures were EUR 268 million in 2015, with significant growth in recent years. The HPI estimated that between 2008-2013, the laboratory medicine costs of the PHI grew 7.3 % per year, with total costs rising 2.9 %[61]. The biggest growth, of all specialisations, was in genetics, thanks to the development of the new diagnostics procedures. Those are among the most expensive

[58] With the inclusion of expected reduction of unit prices in 2017.
[59] Tables with the list of specialisations are shown in Annex 3.
[60] Pharmacy-based Cost Group – groups representing morbidity of insured persons (chronic diseases).
[61] http://www.hpi.sk/cdata/Publications/hpi_labmed_publikacia.pdf using the compound annual growth rate.

CDTU procedures. Laboratory medicine providers themselves have a majority share of the market[62]. The profitability of some providers indicates that the health insurance companies have reserves in unit price negotiations.

[62] The biggest groups are Medirex Group (including HPL spol. s r.o. and Medicyt, s.r.o.) with unconsolidated income of approx. EUR 57 million in 2015 and Alpha medical group (including Alpha medical patológia, s.r.o., Patológia, s.r.o., Klinická patológia Prešov, s.r.o., Histopatologia, a. s.) with unconsolidated income of EUR 51 million.

Chart 22: Distribution of PHI costs on laboratory procedures by specialisation in 2015 (in EUR million)



Source: eHealth

Table 15: Individual laboratory procedures providers by income in 2015 (in EUR million)

Provider	Turnover	Profit margin (in %)
Alpha medical, s.r.o.	41.8	2.2*
Medirex, a.s.	35.7	12.6
HPL spol. s r.o.	16.2	17.1
synlab slovakia s. r. o.	12.2	-6.7
KLINICKÁ BIOCHÉMIA s.r.o.	13.7	23.7
Alpha medical patológia, s.r.o.	5.2	40.4
Medicyt, s. r. o.	5.1	11.7
Martinské bioptické centrum, s.r.o.	4.9	28.8
CYTOPATHOS spol. s r.o.	4.5	13.4
Analyticko-diagnostické laboratórium a ambulancie s. r. o.	3.7	7.6

Source: statement of accounts

**affected by the goodwill amortisation of EUR 6.1 million*

Chart 22 above – blue is the clinical biochemistry, light blue is the clinical microbiology, dark blue is the immunology and allergology, light grey is the haematology and transfusion medicine, dark grey is the pathologic anatomy and pink is the medical genetics

Binding standard procedures need to be introduced for all (from the point of view of PHI costs) major diagnoses. The cost of the treatment provided to the patient now varies depending on the treating doctor. There is expert guidance for some diagnoses, published by the professional associations, however this only has indicative character. Nevertheless, implementation of the binding standard procedures must not necessarily lead to a reduction in PHI costs, since, depending on the particular wording of these procedures, the outcome can be the opposite with some diagnoses.

If the indicating doctors with costs per treated patient higher than 90th percentile in their specialisation reduced the prescription to the level of the 90th percentile, EUR 27.3 million (10 % of the cost of laboratory procedures) would be saved on the laboratory procedures. The saving would be EUR 64.8 million (24 %) when adjusted to 75th percentile. A methodology similar to the analysis of the over-consumption of medicines was used to estimate the potential saving from reduced consumption[64].

Table 16: PHI costs on laboratory procedures by specialisation and quantification of the saving potential (EUR 1 000)[63]

Expertise	PHI costs 2015	Saving – 75th percentile	Saving – 90th percentile
internal medicine	27,405	11,243	5,554
gynaecology and obstetrics (+ODC)	26,609	5,697	2,384
general medicine	25,769	3,120	958
clinical immunology, children's clinical immunology and allergology	17,108	1,682	653

[63] Tables based on the individual cohorts are shown in Annex 3.

[64] The analysis examined the distribution of costs for laboratory procedures per one treated patient (one-off patients only), based on the specialisation of the indicating doctor, in 4 age cohorts (0-18, 19-44, 45-61, 62+). Of the total PHI costs on laboratory procedures in the eHealth database (EUR 268 million), EUR 244 million (91%) was attributable to individual specialisations. The saving from the unassigned fraction has been extrapolated. It is appropriate to refine this analysis with PCG data.

haematology and transfusion medicine	16,877	3,715	1,566
gastroenterology (+ODC)	11,163	2,196	636
general medical care – children and adolescents	10,958	1,442	701
surgery (+ODC)	10,009	3,926	1,392
endocrinology	8,805	953	344
medical genetics	7,347	1,671	1,172
other specialisations	81,844	23,398	9,504
costs unallocated to specialization	23,707	5,739	2,417
Total	**267,602**	**64,781**	**27,279**

Source: MF SR according to eHealth data

Part of the over-consumption of the laboratory procedures is down to duplication of procedures. These occur mainly due to the unfinished computerisation of healthcare (but also due to other factors such as impairment of samples). Doctors do not have comprehensive information on the results of their patients' procedures from other doctors. For example, in the case of testing of the oncology marker CA 19-9 (PHI costs of EUR 1 million in 2015), almost 4 % of patients already had the procedure done within the last month, prescribed by another doctor.

- **Measure**: **Computerisation and sharing of test results between doctors**, as part of the eHealth implementation, will help reduce the number of duplicated examinations.
- **Measure**: PCG parameters will be included in the analysis of the variability of prescription.
- **Measure**: **Binding standard procedures for laboratory procedures** shall be introduced, which will contribute to the efficiency of diagnostics, and enable better inspection of the prescription by the insurance companies' review doctors. These standards must be updated regularly.
- **Measure**: **DRG implementation, including payments for CDTU** shall strengthen the hospitals' direct responsibility for costs, encourage a more rational indication of laboratory procedures, and increase pressure to reduce the price of individual procedures.

3.4 Ambulances and transport

Slovakia spends approximately EUR 150 million from the public purse on ambulances and transporting patients. The complete operation of the emergency medical service (hereinafter "EMS")[65] is fully covered by public health insurance. Health insurance companies also cover the activities of emergency medical service's operational centre, medical first aid service, and transport medical service (hereinafter "TMS"). TMS alone should be co-financed by the patients.

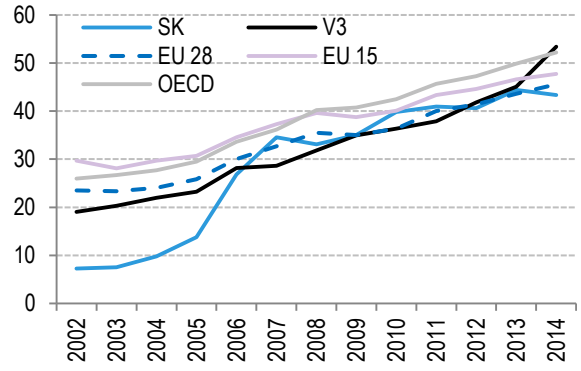
The Ministry of Health has drawn up a separate project to address this issue – Záchranná zdravotná služba – efektivita (Emergency Medical Service – Efficiency), and a proposal of specific measures will be ready by the end of January 2017 (project details in Annex 5).

[65] EMS is provided by rapid medical assistance vehicles (including vehicles with mobile intensive care unit equipment), emergency medical assistance and helicopter emergency medical service.

Box 5: Comparability of international data and inconsistent methodologies

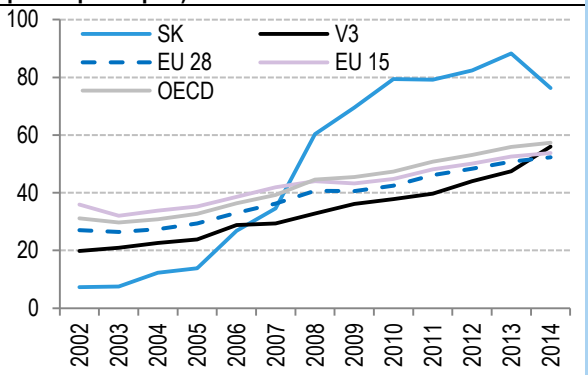
Expenditure on patient transport is comparable with neighbouring countries. However the methodologies of collection of the data markedly undermine the informative value of the international comparison. According to the OECD classification, expenditure on patient transport (transport and ambulance vehicles) is given together with the expenditure on fire-fighting. Moreover, in many countries patient transport forms part of payment for hospitalisation, and as such is not separately attributable to this category, which underestimates the actual expenditure.

Chart 23: Expenditure on transport and ambulances – public resources (in PPP USD, common prices per capita)



Source: OECD

Chart 24: Expenditure on transport and ambulances – public and private resources (in PPP USD, common prices per capita)



Source: OECD

Official databases provide estimated and incorrectly calculated values of household expenditure on transport medical services. Nearly twice the difference in the total expenditure on ambulances and transport compared to the average of the other countries is caused by private payments. However the development of the reported values of private resources on related types of medical care supporting services show that the aggregate sum of the expenditure on laboratory analyses, imaging diagnostics and patient transport is not divided into individual items (see table in the box). It is even incorrectly attributed to just one of them. Since 2008 it is attributed to the indicators concerning patient transport, i.e. to transport and emergency medical service. This creates an incorrect reading of the steep increase in private expenditure as well as total expenditure.

Table 17: Private expenditure on supporting services (Slovakia, EUR million)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Laboratory services Imaging diagnostics	90.0	99.9							0.0
Patient transport			78.2		108.6	106.8	116.0	118.2	87.7
Total	*90.9*	*98.9*	*78.2*	*95.1*	*108.6*	*106.8*	*116.0*	*118.2*	*87.7*

Source: OECD

Despite the missing alternative data sources, it can be assumed that household expenditure on transport and ambulances only constitutes a marginal addition to public resources, since patients' contributions are legitimate only in the case of transport medical service indicated by the doctor, which costs the medical insurance companies approximately EUR 25 million a year.

In order to adequately compare the expenditure on services related to patient transport in Slovakia and other countries, it is necessary to obtain from foreign institutions a more detailed composition of financing by all relevant subjects for an accurately defined scope of what constitutes "patient transport".

Besides the significant financial aspect of the evaluation of the structure of medical expenditure, patient transport is also an area in which measures can be implemented that can lead to an increase in transparency and efficient use of this service, even without a major increase in financial resources.

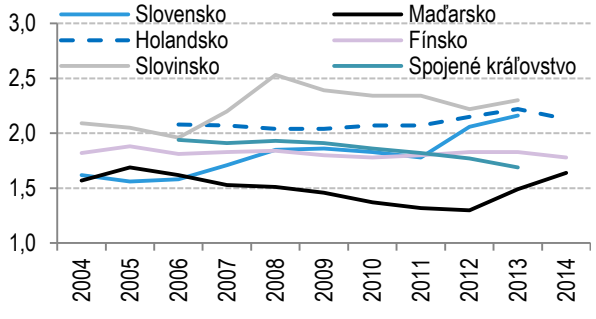
- **Measure: The involvement of transport medical service (TMS) providers and medical first aid service (MFAS) providers in the integrated rescue system** will enable provision thereof to the patients whose medical condition does not require the use of emergency medical service vehicles.
- **Measure: Integration of emergency medical service providers into eHealth** will ensure that EMS is informed about the patient's clinical history and medication used, and ensure that the services required are available at the receiving clinic.
- **Measure:** Detection of **presence of alcohol or drugs** in the bloodstream of patients brought in by the EMS to the emergency department of the hospital, and automatic notification to the health insurance company so that payment for the medical care provided can be recovered [66].
- **Measure: Acceleration of blanket implementation of the Automatic vehicle location system** (GPS-based communication between the hub and the vehicle) in all EMS and TMS vehicles and regular inspections of the functioning of these devices.
- **Measure:** Preparation of a proposal to **streamline the EMS actions** while maintaining the geographical availability and defined parameters, as well as conditions for streamlining of the EMS network (staffing and competence, material and technical equipment).
- **Measure:** Proposal to involve **TMS in the secondary transport** by ASH (SR hub) to be prepared by January 2017 on the basis of the analysis carried out.

3.5 Medical care professionals

The average income of Slovak general practitioners (employees), expressed as the share of the average salary, has risen significantly in recent years and is comparable to other EU countries[67]. However, most general practitioners are not employees. They operate stand-alone private clinics. On the contrary, Slovak nurses' earnings, when compared to the average salary, are lower than those in V3 or EU counties. Insufficient remuneration can also play its part in the fact that the number of nurses is in decline, compared to other countries.

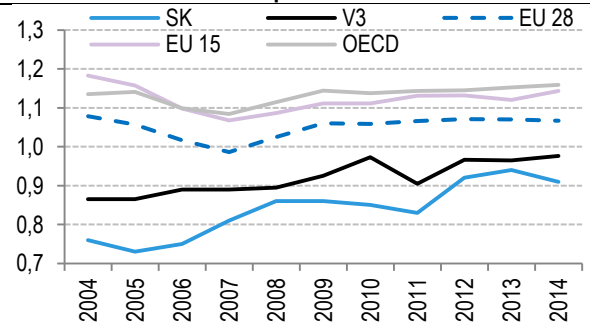
The Ministry of Health has drawn up a separate project to address this issue – Model kompetencii a Rezidentský program (Competence model and Residential program); a proposal of specific measures and an implementation plan will be ready by the end of 2017 (project details in Annex 5).

Chart 25: Salaries of general practitioners (employees)



Source: OECD

Chart 26: Salaries of hospital nurses



Source: OECD, Slovak Medical Chamber

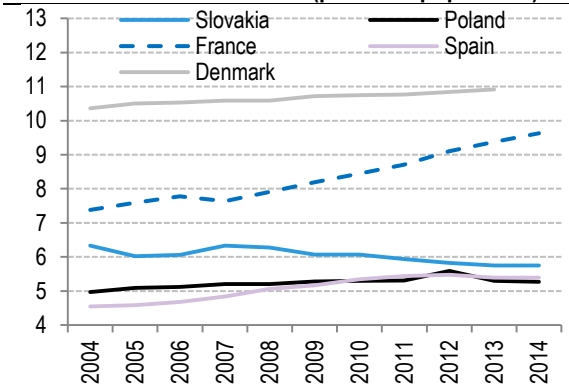
[66] The law is applied to the minimum extent in such cases (Section 42(4)(a); Act No 577/2004).

[67] In a number of countries, OECD data is not available, which is why we use specific countries instead of the average of V3, EU and OECD.

Chart 25 above – Blue is for Slovakia, black is for Hungary, dashed line is for Netherlands, pink is for Finland, light grey is for Slovenia and green is for the United Kingdom.

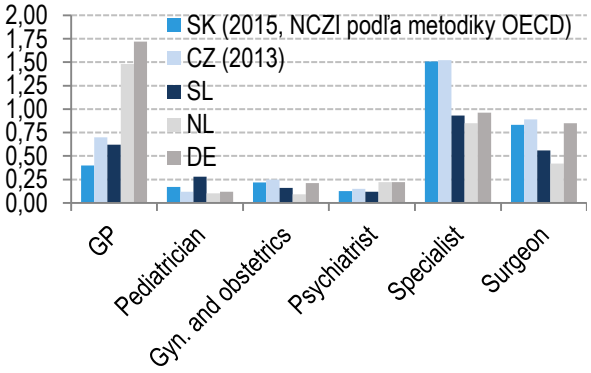
According to the international comparison of the doctor structure by specialisation for 2014, we have fewer general practitioners and more specialists. The shortage of first-contact doctors (general practitioners and paediatricians) is further confirmed by comparison to the Czech Republic, which has the most readily comparable medical care system of the compared countries. General practitioners in the medical care system carry out the role of first contact, while administering patient access further into the system (gatekeeper). Their shortage, or the non-performance of their competences, makes medical care more expensive, since basic medical issues have to be taken care of by specialists.

Chart 27: Number of nurses (per 1 000 population)



Source: OECD

Chart 28: Number of doctors by specialisation (per 1 000 population, 2014*)



**or the newest available data*

Source: OECD, NHIC

There can be several reasons for the shortage of doctors. The high cost of setting up own clinics constitutes an objective obstacle for the entry of young graduates into the system. Such costs may deter people from studying medicine in the first place, as general practitioners have fewer employment opportunities compared to specialists and are forced to set up their own clinics. The uncertainty of the patient portfolio when setting-up clinic in an area with well-established general practitioners constitutes another objective obstacle.

In order to mitigate the adverse situation, the Ministry of Health established the Residential Programme in 2013 to strengthen the general practitioners' capacity and to increase their education with the aim of strengthening of primary medical care. At the same time, the Residential programme should decrease the rate of visits to specialised clinics and bring financial savings from transporting patients to specialised clinics.

- **Measure:** Creation of sustainable, efficient and flexible system of pro-patient orientated, accessible and safe general outpatient medical care for adults, and for children and adolescents.
- **Measure:** Regardless of the Residential programme, it is necessary **to identify areas in which the general practitioners would be able to provide certain medical procedures that are currently in the competence of specialists in a cost-effective manner**. One positive example of the enhancement of competences of general practitioners is the provision of medical care to patients with selected diagnoses (e.g. diabetes mellitus, high blood pressure, pre-surgery examinations), that were formerly in the competence of specialists.
- **Measure: Review of legislation on the competence of medical staff other than doctors**: nurses, midwives, paramedics, radiology technicians, dental technicians, dental hygienists.

- **Measure: A proposal for an adjustment of the minimum salaries of individual competence levels and increase of the attractiveness of medical staff positions** (e.g. improvement of the position of the nurses...) will be drawn up.
- **Measure:** Specific attention will be **given to the remuneration system of medical staff**, as this represents one of the main motivation issues. A Ministry of Health project is focusing on supporting and promoting the remuneration of the medical staff **based on merit**.

3.6 Doctor's appointments

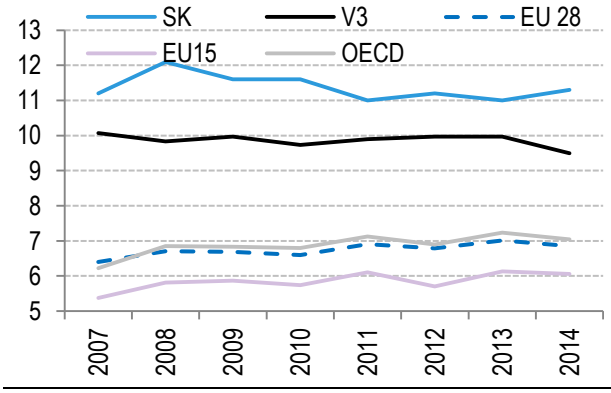
Slovakia has long had a notably higher number of doctor consultations than the average of the V3, EU and OECD. Appointment fees are one of the possible reasons for changes in the doctor appointment rate. In 2013, Slovakia had on average 11 consultations per capita, in V3 it was 10, in OECD and EU 28 it was just 7. Between 2002 and 2006, doctor appointments count dropped by 20 %. At that time, doctor appointment fee of SKK 20 was in place. After 2006, when the fee was removed, there was a year-on-year increase in doctor appointments of 7.7 %.

A separate Ministry of Health project entitled Platby a doplatky (Fees and excess payments) addresses the issue of doctor appointments.

The number of appointments can also be influenced by the referrals, although their effect is not clear. On the one hand, this strengthens the position of the general practitioner in relation to patient management (gatekeeping), resulting in fewer specialist appointments; on the other hand, there is an obligation to collect the referral from the general practitioner, increasing the appointment rate. The system of referrals has been repeatedly introduced and repealed in Slovakia[68]. The effect on the number of appointments is not visible, with the possible exception of 2008 to 2011, when the number of appointments decreased by 1, on average.

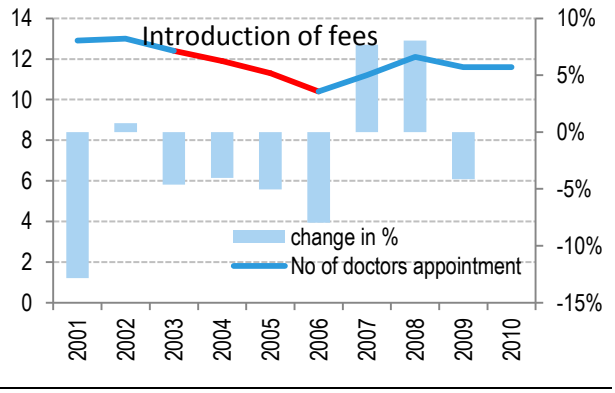
- **Measure: Motives for the high number of doctor appointments** and the connection thereof with the over-consumption of drugs in Slovakia needs to be further examined. the excessive appointment rate of outpatient medical facilities leads to an excess load on capacity and prolonged examination waiting periods.

Chart 29: Number of doctor appointments (per capita per annum)



Source: OECD

Chart 30: Impact of the introduction of doctor appointment fees (per capita per year)



Source: OECD

[68] Referrals were removed in 2004, introduced again on 1 January 2008 and applied until 1 April 2011. Last time, they were introduced on 1 April 2013 and continue to apply.

Fees and excess payments of patients

When drawing payments from the insured person for the medical care provided, the current system is characterised by unclear rules. In practice, there is no list of medical procedures for which payments from insured persons can be requested, nor procedures that not covered by public health insurance. The patient is the one who suffers the most in this situation. What is free of charge with one doctor can be subject to a fee with another. At the same time, the amount of the fees may vary from one doctor to another.

A properly established structure of medical care fees is expected to decrease number of unnecessary doctor appointments with the consequent positive impact of reducing waiting periods and optimising the number of procedures.

As a part of the Platby a doplatky project (Fees and excess payments), the Ministry of Health is dealing with issues relating to the non-existent list of paid procedures, as well as the lack of uniform criteria for fixing the amount thereof.

- **Measure: Implementation of clear rules for patient payments** and creation of a system of multi-source financing. Guarantee and support for decent, free access for socially vulnerable and disadvantaged persons.
- **Measure:** Proposal for **rules and scope of fees** will be drawn up (making appointments, equal access, fairness and support for the most vulnerable groups) in accordance with the Government's Programme Statement. A list of medical procedures will be drawn up, the amount of the payment for medical care will be determined, a new service relating to the provision of the medical care will be defined, and the obligations of medical care providers and sanctions for breach thereof will be specified.

3.7 Public health insurance system and health insurance companies

Public health insurance system

Principal activity of the health insurance companies (HIC) is to ensure medical care for the insured persons at the point of service. There are three insurance companies in the public health insurance system (multi-party system), two private and one state-owned. In practice, all of them provide the same product, namely public health insurance. Public health insurance in Slovakia is based on the solidarity principle rather than the principle of competition. That means that not even the performance of the public health insurance can be considered the economic activity[69]. Commercial health insurance provided by the HIPs, which is often part of the multi-party systems abroad (e.g. in Netherlands), does not exist as a product in Slovakia thus far. The size of the segment of the market that would be interested in this product is also questionable. Since Slovakia has a multi-party system, it does not render economies of scale, a typical benefit of the single-party system (with a single insurance company).

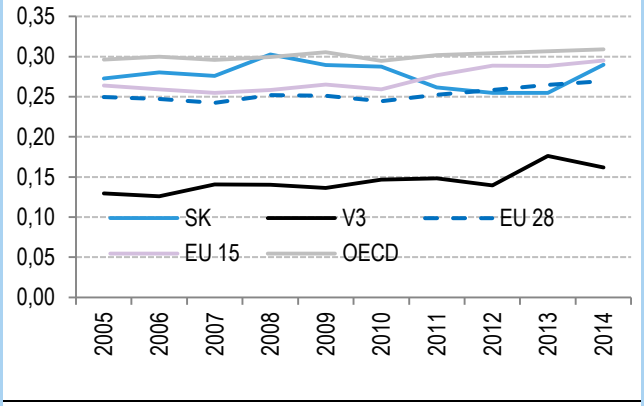
Box 6: Single-party and multi-party health insurance system

The advantage of the **single-party system** is chiefly the economy of scale in the case of some fixed expenditure on non-medical support activities, management and operation of the HIP. Providers only negotiate contract terms once (with each insurance company), and they do not have to calculate the mode of patient treatment depending on affiliation to an insurance company. Effective control and regulation of this system is a necessity,

[69] This despite the fact that public insurance system is carried out by the health insurance companies which are joint stock companies, that all health insurance companies report profit from the performance of the health insurance, and that they are authorised to negotiate with the medical care providers and conclude contracts with them on the provision of the medical care. (This statement was endorsed by the European Commission in its decision SA.23008 (2013/C) (ex 2013/NN) of 15 October 2014.).

because of the risk of decision-making powers being monopolised.

Chart 31: Expenditure on administration and insurance (% GDP)



Source: OECD

The multi-party system enables patients to choose from a number of insurance companies, which provide services and benefits, perceived by the patients as above-standard or tailor-made for them. It also creates higher pressure on the quality of provided care. Insurance companies are more demanding in terms of quality , since they are running the risk that the patient will leave and move to a competitor.

It is impossible to state definitively which of the systems is better and there are positive examples of both abroad (UK – single-party system, NL – multi health insurance company system). The current Slovak system is not an authentic version of either of the systems, and in practice it combines their shortcomings (high costs and homogenous product). Slovakia has a relatively expensive health insurance system, which is confirmed by the international comparison. We spend a higher share of GDP on administration and insurance compared to EU 15 countries and almost twice as much as the V3 countries' average.

Fund management of health insurance companies

The main income of the insurance companies is the health contributions from the economically active population and funding by the state. In 2015, insurance companies covered more than 95 % of all medical care expenditure.

Table 18: Selected income and expenditure of the health insurance companies (2015)

	VZP	Dôvera	Union
Number of insured persons (thousands of persons)	3,267	1,441	452
Collection of insurance premium (EUR million)	2,659	1,148	317
Health care expenditure (EUR million)	2,780	942	270
Reallocation of the insurance premium (EUR million)	164	-117	-48
Operating expenditure (EUR million)	90	35	13

Source: MF SR

Each insurance company's size of operating costs is regulated by the Law[70], based on the amount of insurance premium collected. Insurance companies seldom utilise the level of the legal limit. In accord with the prerequisite of the economies of scale, the biggest saving compared to the legal limit was achieved in 2014 by the biggest

[70] Act No 581/2004 Section(6)(a).

insurance company, VZP. Conversely, the operating cost limit was utilised the most by the insurance company Union (7.4 p.p. more than VZP).

Table 19: Operating cost expenditure for 2014

	VZP	Trust	Union
Operating cost legal limit (EUR million)	87	41	13
Operating cost (EUR million)	77	37	13
Utilisation of the operating costs (%)	88.8 %	90.2 %	96.2 %

Source: MH SR

Insurance companies have different insurance portfolios, and their average medical care cost differs as well. VZP has the most cost-intensive insured persons: it spent on average EUR 851 per patient in 2015. Union has the least cost-intensive insured persons (approximately 707 % of the cost of the VZP). In order for the insurance companies to be able to cover the adequate medical care regardless of the composition of the portfolio, 95 % of the collection of the insurance premium is redistributed[71]. The overall volume of redistribution in 2015 was EUR 164 million in favour of VZP. In general, the redistribution reduces the difference between the collected insurance premium and medical care cost per insured person (see Table 19, difference between collected insurance premium and the cost before and after redistribution).

Table 20: Impact of redistribution (2015)

	VZP	Trust	Union
Collection of insurance premium per insured person	814	767	701
Collection of insurance premium following redistribution, per insured person	864	716	596
Medical care cost, per insured person	851	654	597
Difference between collected insurance premium and expenditure before the redistribution	*-37*	*113*	*104*
Difference between collected insurance premium and expenditure following the redistribution	*13*	*62*	*-1*

Source: MH SR

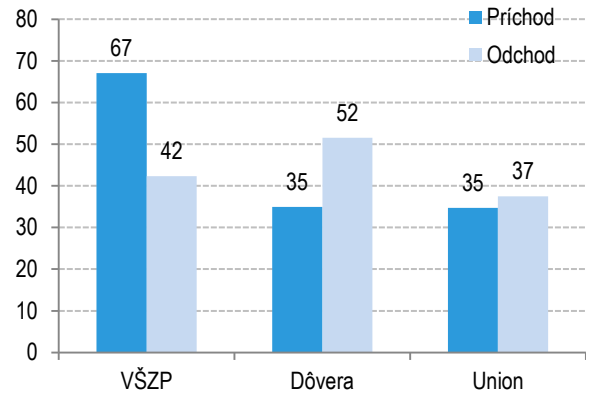
The main difference between collection of the insurance premium and medical care cost per insured person is achieved by Dôvera insurance company, regardless of redistribution. By contrast, Union attains higher costs per patient than the collection of the insurance premium, following redistribution. This may be due to the imperfect redistribution mechanism[72], as well as the variable efficiency of medical care purchasing.

Chart 32: Average monthly cost of transferring insured persons for 2014 (EUR)

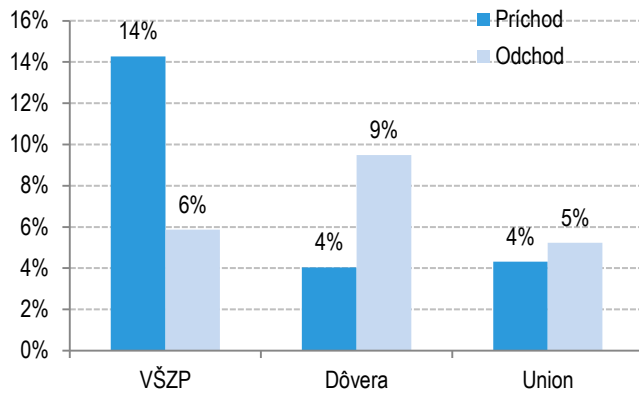
Chart 33: Proportion of chronic patients* of the total number of transferring insured persons in 2014

[71] Redistribution mechanism takes into account the age cohorts, economic status, sex and PCG groups.

[72] This mechanism accounts for the differences in portfolios only to a limited extent. The current redistribution model accounts for around 22% of the variability of the patient cost. The calculation is based on the PCG data from the insurance companies, on the grounds of which the risk indices for the individual insured person cohorts are defined.



Source: IFP based on CRIP and PCG data



Source: IFP based on CRIP and PCG data
**Chronic patients were identified by consumption of medicines, presented by the affiliation to the PCG group.*

Chart 32 above – blue represents the arrivals, light blue represents the departures. Columns are health insurance companies VZP, Dôvera and Union.

Chart 33 above – blue represents the arrivals, light blue represents the departures. Columns are health insurance companies VZP, Dôvera and Union.

Even though the insurance companies should provide the same access to medical care for all the insured persons, the more cost-intensive insured persons and the insured persons with chronic medical problems[73] prefer VZP to Dôvera and Union. Analysis of the transferring insured persons in 2014 showed that 14 % of the insured persons transferring to the VZP are chronic patients. Only 4 % of chronic patients were added to Dôvera and Union. The average costs of the insured persons leaving insurance company Dôvera were higher than the costs of the insured persons leaving Union and VZP.

[73] These patients are identified on the basis of affiliation to the PCG group.

4 Availability of data for reviewing healthcare expenditure

Reviewing expenditure on healthcare and projected increases in value for money requires reliable data on the provision of medical care in Slovakia. Preliminary analysis of the data identified room for improvement of the collection and reporting of data in several areas:

4.1 Aggregate data for international comparisons

- Expenditure on medicines – unlike other countries, Slovakia does not provide data on total expenditure on medicines and medical goods to the OECD. Data on expenditure on medicines and goods published by the pharmacies is available; however, the distribution of data on prescribed medicines and over-the-counter medicines is missing. Data on expenditure on medicines and goods administered in the hospitals are altogether missing.
- Medicine sales – Slovakia submits data on medicine sales expressed in prices from the producers (excluding VAT) to the OECD; most countries report sales in retail prices.
- Private expenditure on supporting services – it is necessary to review the reporting of the expenditure on laboratory, imaging and transport services.
- Radiology examinations and laboratory procedures – unlike other countries, Slovakia reports data on expenditure on radiology examinations and laboratory procedures jointly; separate data for individual categories is not available.

4.2 Detail data for analysis

National Health Information Centre collects the data necessary for analysing the effectiveness of the provision of medical care. The data are not public, however, or are published only as part of the NHIC publications, in text or graphic form. Data should be regularly published in standardised form (spread sheet format, in one place for all the available time periods) and serve to analyse the medical care system in order to increase value for money:

- Prescription of medicines, devices and medical procedures (anonymised).
- Data on hospital funds management (by department; e.g. admissions, number of hospital beds, employees, hospitalisations, hospital operating costs).
- Data on income and procedures of the medical care providers (anonymised).
- Data on income of medical staff by medical care providers (anonymised).
- Data on expenditure of the health insurance companies in a single structure, broken down to individual expenditure categories.

4.3 Reporting of other data

- The structure of the report to monitor monitoring the income, expenditure and fund management of the health insurance companies is updated so that it reflects the expenditure of individual areas of the medical care.
- The reporting of the data from medical care providers (quarterly and annual reports for the NHIC) requires automation and review of the data. This will bring reduced bureaucracy, increases quality of data and simplified comparisons.
- In addition to the number of packages, as reported today, medicine consumption also needs to be recorded in daily defined doses (DDD). SIDC data on medicines consumption in DDD are collected by the OECD. However, Slovak publications still use number of packages, which does not reflect the package size, and therefore presents a distorted picture of consumption.

Annex 1: Medical care expenditure

Table: Expenditure structure of the PHI on medical care (in EUR 1 000)

	2013	2014	2015	2014 growth, %	2015 growth, %
TOTAL	3 672 270	3 882 150	3 995 509	5.7 %	2.9 %
Pharmaceutical care	999 054	1 042 011	1 077 084	4.3 %	3.4 %
of which: pharmacies	858 858	884 290	904 704	3.0 %	2.3 %
dispensaries and ophthalmic optics	140 196	157 721	172 381	12.5 %	9.3 %
Outpatient care	1 448 011	1 567 154	1 616 067	8.2 %	3.1 %
of which: general outpatient	264 057	276 423	293 293	4.7 %	6.1 %
out of which: for adults	101 316	107 646	114 705	6.2 %	6.6 %
for children and adolescents	60 847	64 923	68 167	6.7 %	5.0 %
MFAS	17 113	16 215	19 715	-5.2 %	21.6 %
AS	84 781	87 639	90 707	3.4 %	3.5 %
specialized outpatient care	1 108 016	1 207 510	1 232 988	9.0 %	2.1 %
of which: SOC including Group A medicines	314 752	404 692	389 529	28.6 %	-3.7 %
dialysis	86 175	86 938	85 622	0.9 %	-1.5 %
ODC	67 116	56 323	73 409	-16.1 %	30.3 %
stationaries	4 719	4 817	4 939	2.1 %	2.5 %
mobile hospice	75	76	103	1.0 %	34.8 %
gynaecological (including capitation)	56 897	55 564	58 884	-2.3 %	6.0 %
stomatology (excluding MFAS)	125 533	127 134	129 395	1.3 %	1.8 %
CDTU	406 153	422 418	439 881	4.0 %	4.1 %
HNCA	12 731	13 695	14 588	7.6 %	6.5 %
CES	10 240	11 634	12 152	13.6 %	4.5 %
transport (excluding MFAS)	23 626	24 218	24 486	2.5 %	1.1 %
other	75 939	83 222	89 786	9.6 %	7.9 %
Institutional care	1 084 226	1 175 391	1 245 863	8.4 %	6.0 %
of which: general hospitals	769 332	836 604	890 115	8.7 %	6.4 %
specialized hospitals	156 324	174 149	182 981	11.4 %	5.1 %
long-term medical care facilities	14 119	14 781	15 797	4.7 %	6.9 %
nursing care facilities	396	545	668	37.5 %	22.5 %
hospice	1 440	1 452	1 577	0.8 %	8.6 %
natural therapeutic curing resorts	49 524	47 868	48 925	-3.3 %	2.2 %
Forms of medical care T O T A L	3 531 291	3 784 556	3 939 014	7.2 %	4.1 %
Medical care provided to foreigners, care provided abroad, to the homeless, to refugees, urgent medical care provided HIC	24 900	31 203	36 011	25.3 %	15.4 %
Other	116 079	66 391	20 484	-42.8 %	-69.1 %

Source: HCSO, MF SR

Notes: Table does supplement data of the Ministry of Finance on medical care expenditure of the PHI with the data of HCSO (financially granted procedures) on expenditure on specific areas of medical care. The item "other" explains the discrepancy between data of the HCSO and MF SR on medical care expenditure. In 2015, this discrepancy is 0.5 % of medical care expenditure.

Annex 2 Analysis of the patterns of medicines prescription

Table: Prescription by specialisations (number of prescriptions), coverage thereof and quantification of saving (EUR million)

specialisation	10%	25%	50%	75%	90%	99%	max	total of coverage	saving at 75%	saving at 90%
general medicine	1.00	1.00	3.07	8.70	10.98	15.85	33.70	144.50	17.55	5.30
internal medicine	1.00	1.00	1.97	3.22	4.75	8.79	25.80	47.88	13.71	3.65
general care – children and adolescents	1.00	1.29	2.72	3.50	4.24	5.73	14.66	27.14	2.56	0.84
psychiatry	1.00	1.50	3.00	7.56	10.50	15.51	18.30	41.24	7.68	2.17
neurology	1.00	1.00	2.00	3.08	4.00	6.59	25.00	53.32	10.38	3.81
cardiology	1.00	1.00	2.00	3.57	5.00	7.74	14.00	45.04	13.30	4.26
diabetology, metabolism disturbances	1.00	1.00	2.00	4.75	6.30	9.10	13.00	68.15	11.31	2.91
dermato-venereology	1.00	1.43	2.16	2.82	3.43	4.61	10.67	23.08	5.93	3.87
immunology and allergology	1.00	1.18	2.29	3.58	4.51	7.78	11.00	32.22	4.37	1.58
pneumo-phthisiology	1.00	1.00	2.07	3.78	5.05	7.67	10.13	26.78	4.50	0.96
ophthalmology (+ODC)	1.00	1.14	1.78	2.30	2.85	4.56	12.00	10.52	1.39	0.46
gynaecology and obstetrics (+ODC)	1.00	1.20	1.71	2.25	2.72	3.73	7.67	9.98	1.29	0.54
orthopaedics (+ODC)	1.00	1.19	1.61	2.19	2.86	4.69	8.00	13.12	2.19	0.75
gastroenterology (+ODC)	1.00	1.00	1.83	2.55	3.04	5.45	12.00	24.45	4.20	1.84
urology (+ODC)	1.00	1.10	1.70	2.46	3.00	4.13	6.95	27.87	3.60	1.10
endocrinology	1.00	1.00	1.44	2.04	2.44	3.75	13.00	10.51	1.67	0.64
oto-rhino-laryngology (+ODC)	1.00	1.20	1.66	2.00	2.30	3.24	5.65	4.14	0.38	0.18
rheumatology	1.00	1.00	2.17	4.05	5.14	7.63	12.00	41.04	8.39	3.21
nephrology	1.00	1.00	2.17	3.72	6.08	16.22	41.29	17.33	7.13	3.86
medical oncology	1.00	1.20	2.23	5.32	7.04	9.99	11.39	64.91	11.51	3.65
haematology and transfusion medicine	1.00	1.17	2.07	3.00	3.89	8.58	13.67	44.05	12.26	7.51
infectology	1.00	1.00	1.50	2.01	3.14	7.76	19.32	9.03	4.74	3.24
hepatology	1.00	1.00	1.98	3.31	4.43	6.10	7.08	7.77	1.45	0.51
geriatrics	1.00	1.00	2.00	3.12	4.35	10.71	16.51	1.49	0.48	0.21
total								795.56	151.95	57.04
extrapolated to the total value of coverage according to NHIC								828.00	158.15	59.37

Source: eHealth, HPU

Annex 3 Analysis of the patterns of the CDTU procedures

Table: Prescription of CT examinations by specialisation (procedures per 1 000 patients), coverage thereof and quantification of saving (EUR million) – calculation based on the proposed average price of the examination in 2017 (including additional items)

specialisation	25%	50%	75%	90%	99%	average	total of coverage	saving at 75%	saving at 90%
neurology	177	344	613	924	1 553	444	15.32	3.32	1.39
surgery	18	61	148	338	934	178	7.03	3.09	0.85
internal medicine	10	35	128	341	1000	135	6.88	3.75	1.25
medical oncology	170	412	712	1 051	2 119	329	5.05	0.84	0.34
accident and emergency surgery ward	37	80	174	362	803	300	3.69	1.31	0.34
pneumo-phthisiology	72	139	269	554	1196	219	3.43	1.04	0.38
urology	48	111	206	342	1562	190	2.90	0.66	0.32
oto-rhino-laryngology	41	91	174	303	557	77	1.70	0.30	0.08
gastroenterology	39	87	162	298	1 943	114	1.51	0.40	0.19
radiation oncology	130	308	558	800	1 120	272	1.21	0.17	0.06
other							9.05	3.21	1.55
Total							**57.75**	**18.09**	**6.74**

Source: eHealth, MH SR

Table: Prescription of MRI examinations by specialisation (procedures per 1 000 patients), coverage thereof and quantification of saving (EUR million) – calculation based on the proposed average price of the examination in 2017 (including additional items)

specialisation	25%	50%	75%	90%	99%	average	total of coverage	saving at 75%	saving at 90%
neurology	185	297	459	673	1 128	261	23.28	2.74	0.88
orthopaedics	37	68	146	266	821	117	7.39	1.69	0.65
surgery	8	21	59	200	1 000	22	2.38	0.50	0.12
accident and emergency surgery ward	17	49	141	323	955	67	2.22	0.61	0.25
medical oncology	21	46	89	172	573	45	1.51	0.41	0.20
neuro-surgery	210	321	551	865	1 036	146	1.31	0.13	0.01
gastroenterology	14	27	54	91	396	38	1.20	0.27	0.12
internal medicine	2	7	24	79	1345	13	1.04	0.37	0.08
oto-rhino-laryngology	6	15	41	105	501	19	0.84	0.28	0.09
paediatric neurology	108	167	308	432	724	69	0.79	0.15	0.06
other							4.46	1.19	0.52
Total							**46.42**	**8.33**	**2.98**

Source: eHealth, MH SR

Table: Distribution of cost of laboratory procedures by specialisation (in EUR), coverage thereof and quantification of saving (EUR million) for 0-18 cohort

specialisation	25%	50%	75%	90%	99%	average	total of coverage	saving at 75%	saving at 90%
general medical care – children and adolescents	8.2	11.3	15.5	20.6	44.6	13.4	9.21	1.19	0.02
clinical immunology, children's clin. immun. and allergology	55.9	83.8	117.7	144.3	234.0	87.3	5.88	0.52	0.12
paediatrics	5.8	14.5	30.6	54.4	194.0	38.5	5.63	2.33	0.15
paediatric gastroenterology, hepatology and nutrition	36.0	48.8	81.0	107.6	153.4	55.7	1.55	0.13	0.01
paediatric endocrinology	29.1	41.3	54.3	60.0	72.7	43.2	1.37	0.04	0.00
medical genetics	306.8	424.8	544.6	727.3	967.3	470.3	1.22	0.19	0.29
paediatric pneumo-phthisiology	24.3	40.2	105.7	144.2	155.8	96.5	0.76	0.14	0.00

infectology	20.1	33.1	48.2	63.1	147.8	40.0	0.65	0.08	0.01
haematology and transfusion medicine	23.5	40.6	81.9	133.9	670.8	63.1	0.65	0.10	0.41
gynaecology and obstetrics (+ODC)	10.1	17.1	26.9	39.5	76.2	21.1	0.57	0.08	0.04
other							4.99	1.70	0.68
costs unallocated to specialization							3.35		
Total							**35.82**	**6.48**	**1.74**

Source: eHealth, MH SR

Table: Distribution of cost of laboratory procedures by specialisation (in EUR), coverage thereof and quantification of saving (EUR million) for 19-44 cohort

specialisation	25%	50%	75%	90%	99%	average	total of coverage	saving at 75%	saving at 90%
gynaecology and obstetrics (+ODC)	14.5	21.3	29.7	42.0	94.8	27.8	19.47	0.24	0.10
general medicine	6.5	9.1	12.2	16.1	33.1	10.6	9.79	0.08	0.05
clinical immunology, children's clin. immun. and allergology	54.8	78.9	106.4	151.9	228.1	88.7	6.49	0.04	0.01
haematology and transfusion medicine	35.2	62.1	110.9	188.4	531.0	89.2	5.25	0.05	0.02
gastroenterology (+ODC)	30.0	49.2	72.1	105.9	185.9	65.1	4.11	0.01	0.01
internal medicine	7.3	13.9	24.0	41.7	90.9	22.2	4.03	0.72	0.22
medical genetics	188.3	247.6	380.8	607.4	1256.6	305.0	3.14	0.01	0.00
endocrinology	22.0	26.9	37.4	44.9	90.7	29.1	2.91	0.00	0.00
surgery (+ODC)	2.5	6.6	12.9	22.8	68.0	8.5	2.16	0.23	0.11
neonatology	5.4	20.2	34.3	56.6	232.0	33.8	2.10	0.02	0.01
other							15.72	13.54	6.76
costs unallocated to specialization							6.61		
Total							**81.78**	**14.94**	**7.29**

Source: eHealth, MH SR

Table: Distribution of cost on laboratory procedures by specialisations (in EUR), coverage thereof and quantification of saving (EUR million) for 45-61 cohort

specialisation	25%	50%	75%	90%	99%	average	total of coverage	saving at 75%	saving at 90%
general medicine	6.5	9.0	12.0	15.8	32.7	10.0	8.17	0.92	0.02
internal medicine	7.3	13.6	23.4	44.6	100.4	26.0	6.82	2.44	1.18
gynaecology and obstetrics (+ODC)	7.1	10.8	17.0	32.7	114.4	15.5	4.77	1.39	0.05
haematology and transfusion medicine	40.3	64.9	122.6	235.7	791.3	95.2	4.69	1.17	0.59
gastroenterology (+ODC)	24.9	38.8	60.6	93.3	195.7	52.4	3.37	0.65	0.06
clinical immunology, children's clin. immun. and allergology	55.9	79.7	109.1	151.2	255.2	84.0	3.04	0.26	0.12
endocrinology	17.9	23.1	30.6	40.0	89.9	24.7	2.76	0.33	0.01
surgery (+ODC)	2.7	7.3	15.8	30.4	109.1	14.2	2.76	1.09	0.04
medical oncology	13.2	33.4	58.5	88.1	170.1	41.5	2.18	0.39	0.06
medical genetics	251.0	496.5	983.1	1 479.0	1 677.6	991.9	1.77	0.41	0.47
other							16.69	4.70	1.18
costs unallocated to specialization							6.44		
Total							**63.48**	**13.75**	**3.78**

Source: eHealth, MH SR

Table: Distribution of cost on laboratory procedures by specialisation (in EUR), coverage thereof and quantification of saving (EUR million) for 62+ cohort

specialisation	25%	50%	75%	90%	99%	average	total of coverage	saving at 75%	saving at 90%

internal medicine	6.9	13.2	23.8	48.8	132.4	33.9	16.50	7.73	3.90
general medicine	5.8	8.4	11.2	15.8	31.4	9.3	7.76	0.94	0.35
haematology and transfusion medicine	39.3	72.8	127.9	249.4	496.9	90.7	6.29	1.25	0.50
surgery (+ODC)	3.2	7.5	18.5	39.9	113.7	20.4	4.78	2.20	1.04
medical oncology	17.9	37.8	56.3	92.6	184.1	46.6	3.90	0.76	0.29
diabetology, metabolism and nutrition disorders	11.4	16.4	23.5	29.4	50.3	17.7	3.68	0.29	0.10
gastroenterology (+ODC)	24.3	36.1	55.4	92.1	148.5	48.3	3.59	0.74	0.25
endocrinology	16.4	20.8	29.7	39.6	93.7	22.9	3.07	0.34	0.17
urology (+ODC)	9.3	12.8	19.0	35.9	90.4	19.7	3.04	0.92	0.46
nephrology	16.1	28.9	55.1	84.6	209.7	42.4	2.87	0.47	0.19
other							23.73	8.27	3.55
costs unallocated to specialization							7.31		
Total							**86.52**	**23.92**	**10.80**

Source: eHealth, HPU

Annex No 4 List of acronyms

		AAHI	Annual Accounts of the Health Insurance
ATC	Anatomical Therapeutic Chemical Classification System	**PET**	Positron Emission Therapy
COFOG	Classification of the Functions of the Government	**PPP**	Economic Parity
CR	Czech Republic	**PAB**	Public Administration Budget
CRIP	Central Register of Insured Persons	**QALY**	Quality Adjusted Life Years
CT	Computed Tomography	**QMA**	Quick Medical Assistance
CZ	Czech Republic	**RTG**	X-ray
DDD	Daily Defined Dose	**EMA**	Emergency Medical Assistance
DRG	Diagnosis-Related Groups – financing system based on diagnosis	**F**	Fact
EAP	Economically Active Population	**SIDC**	State Institute for Drug Control
EF	Expected Fact	**BS**	Baseline Scenario
EMSH	Emergency Medical Service Hub	**HIC**	Health Insurance Company
EU	European Union	**CDTU**	Common Diagnostic and Therapeutic Units
FR SR	Financial Directorate of the Slovak Republic	**SO SR**	Statistical Office of the Slovak Republic
GDP	Gross Domestic Product	**SMM**	Special Medical Material
HNCA	Home Nursing Care Agency	**PCG**	Pharmacy-based Cost Group – groups representing morbidity of insured persons
HPI	Health Policy Institute	**HCSO**	Health Care Supervisory Office
ICU	Intensive Care Unit	**UK**	United Kingdom
IFP	Institute for Financial Policy	**HPU**	Hodnota za Peniaze Unit
MD SR	Ministry of Defence of the Slovak Republic	**HICR**	Health Insurance Company Coverage
MF SR	Ministry of Finance of the Slovak Republic	**PHA SR**	Public Health Authority of the Slovak Republic
MFAS	Medical First Aid	**IES**	Constitutional Emergency Service
MH SR	Ministry of Health of the Slovak Republic	**VZP**	State-run health insurance company Všeobecná zdravotná poisťovňa, a. s.
MI SR	Ministry of the Interior of the Slovak Republic	**GOC**	General Outpatient Care
MRI	Magnetic Resonance Imaging	**V3**	Countries of the Visegrad Four without the SR
NHIC	National Health Information Center	**PHI**	Public Health Insurance
NL	Netherlands	**WHO**	World Health Organisation
NPC	No Policy Change Scenario	**BFT**	Base Functional Type
ODC	One-day Care	**UHB**	University Hospital Bratislava
OECD	Organisation for Economic Cooperation and Development	**MD**	Medical Device
p.p.	Percentage Point	**EMS**	Emergency Medical Service
THUH	Teaching Hospitals and University Hospitals	**SOC**	Specialized Outpatient Care
TMS	Transport Medical Service	**SK**	Slovakia

Annex 5 Overview of[74] selected projects of the Ministry of Health

Transparent management

- ***Objective:*** *Elimination of disadvantageous contracts*
- Formation of the Unit for the management of organisations reporting to the Ministry of Health (guarantor activity, controlling and procurement, project implementation)
- Data collection, compilation and analysis – of the parameters of the operating contracts in the organisations within the Ministry of Health.
- Benchmarking of the parameters of the operating contracts in the organisations reporting to the Ministry of Health.
- Setting of maximum values for the parameters of the operating contracts in the organisations reporting to the Ministry of Health.
- **Deadline**: 31 October 2016

Emergency Medical Service – Effectiveness

- ***Objective:*** *Increase of the effectiveness of the emergency medical service, measuring and publishing of quality indicators, improvement in emergency response times*
- Analysis of the current EMS network (from the point of view of availability, load, effectiveness, cost, in connection to institutional medical care, and possible variations between urban and rural areas).
- **Deadline:** 30 September 2016 (analytical phase)
- Proposal for conditions on the streamlining of the EMS network (staffing and competence, minimum material and technical equipment) while maintaining geographical availability
- Proposal of the involvement of the TMS in the secondary transport by ASH (SR operational centre)
- Transport from the institution to home care
- **Deadline:** 31 January 2017 (proposal)

Competence model

- ***Objective:*** *Increase in the attractiveness of employment in the medical field*
- Support for merit-based remuneration of medical staff.
- Definition of the competences of the individual staff in certain medical posts, based on the content and extent of the education acquired for the purposes of the post.
- Proposal for a review of the competences of medical posts other than doctors (nurses, midwives, paramedics, radiology technicians, dental technicians, dental hygienists) laid down in the legislation.
- Proposal for an adjustment of the minimum salaries of individual competence levels and increase in the attractiveness of employment in the medical field (e.g. improvement of the position of nurses).
- **Deadline:** 31 December 2017

Residential programme

- ***Objective:*** *Establishment of a sustainable, effective and flexible system of patient-orientated, accessible and safe general outpatient medical care*
- **Deadline:** fourth quarter of 2017

[74] The Annex lists only selected Ministry of Health projects out of the total number of 26.

Fees and excess payments

- ***Objective:*** *Implementation of clear rules for patient payments and creation of system of multi-source financing. Guarantee and support of a decent and free access for socially vulnerable and disadvantaged persons.*
- Background: Unclear rules when drawing payments from insured persons for the medical care provided. Excessive appointment rate of outpatient medical facilities (excess load on capacity and extended waiting periods for tests).
- Proposal for rules concerning the fees and the scope thereof (making appointments, equal access, fairness and support for the most vulnerable groups) (Programme Statement of the Government).
- Establishing a list of medical procedures, determining the amount of the payment for the provided medical care, defining a new service relating to the provision of the medical care, and specifying the obligations of medical care providers and the sanctions for breach thereof.
- Clarification of the medical care fees is expected to reduce the number of unnecessary doctor's appointments with the consequent positive impact on reducing waiting periods and optimising of the number of procedures.
- **Deadline:** 27 October 2016