MINISTRY
OF FINANCE
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MINISTRY
OF HEALTH
OF THE SLOVAK REPUBLIC

Healthcare Spending Review Update

September 2022

This Healthcare Spending Review Update is a part of the Government's Value for Money project which aims to reform the rules, set up processes and reinforce institutions to support adopting sound decisions in public interest and significantly increase the value for money in Slovakia's public sector. This document was prepared in cooperation between the Value for Money unit (Štefan Kišš, Vladimír Turček, Slavomír Hidas, Tomáš Hellebrandt, Zuzana Čarnogurská) and the Institute of Health Analysis (Matej Mišík, Kristián Šufliarsky, Peter Barančok, Tomáš Mesároš, Michaela Černenko, Patrik Židuliak, Vladimír Durgala).

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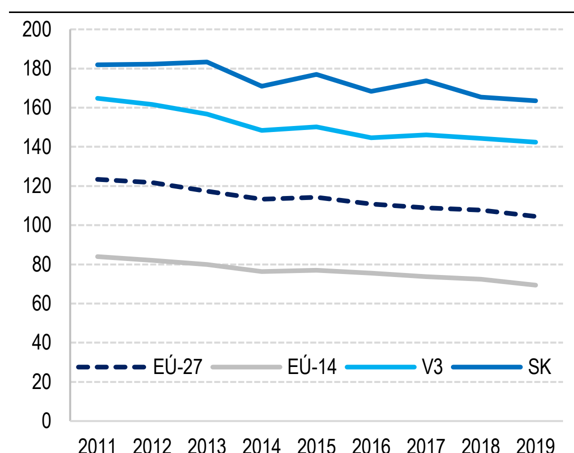
1 Introduction and Summary

This document updates the 2019 Healthcare Spending Review measures and presents a menu of cost-saving and value-based measures that can be incorporated into the general government budget 2023-2025. The total saving potential by 2030 is EUR 483 million, including almost EUR 426 million on public health insurance. The remaining EUR 58 million represents potential savings on pharmaceuticals and medical devices and materials as hospitals' savings outside the public health insurance framework. Most of the saving potential can be realised within the horizon of the general government budget by 2025. Savings on public health insurance expenditures achievable in 2023 amount to EUR 127 million.

The most important measures in terms of the amount of savings include the cost-effectiveness of pharmaceuticals and international referencing of prices and numbers of diagnostic examinations. For a number of the cost-saving policy measures, the implementation is interlinked with value-based and system measures, such as the transfer of certain healthcare services from specialised to general outpatient care and a reduction in antibiotic consumption. Additional resources will need to be allocated for these measures. Improvements in the performance of the healthcare sector are also dependent on value-based measures, the implementation of which is conditional on the availability of resources and the degree of realisation of cost-saving policy measures. The measures mainly aim to stabilise the sector in terms of human resources, strengthen the general outpatient care network and cultivate the application of DRG[1] in inpatient healthcare. This material is a result of cooperation between the research resources of the Ministry of Finance of the Slovak Republic, namely the Value for Money (VfM) unit, and the Institute of Healthcare Analysis (IHA) of the Ministry of Health of the Slovak Republic.

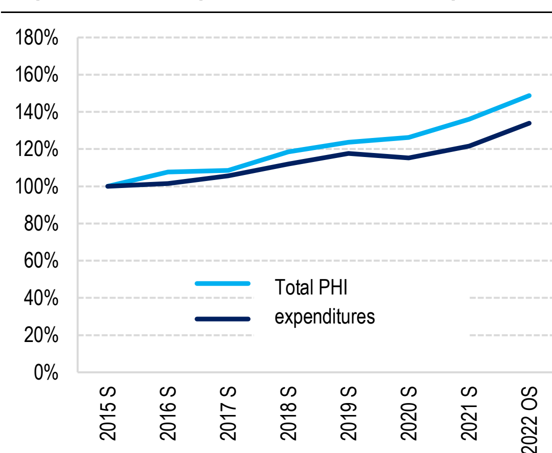
Despite the rapidly growing expenditures on healthcare, the sector's performance lags behind the EU countries. In 2022, Slovakia will spend almost EUR 6.3 billion on healthcare[2], which accounts for 5.9% of GDP and 13% of all public expenditures. The healthcare expenditures in 2015 amounted to EUR 4.2 billion. The healthcare spending will thus increase by 49% in seven years, while GDP at current prices will grow by "only" about 34%. Compared to the average trend of the EU countries for that period, Slovakia's treatable mortality[3] per 100,000 inhabitants as the main performance indicator used in the previous Reviews I and II has not improved.

Graph 1: Treatable mortality (per 100,000 inhabitants)



Source: Eurostat [hlth_cd_apr]

Graph 2: Growth in public health insurance expenditures compared to GDP at current prices



Source: MF SR

[1]Diagnosis Related Groups – a type of payment mechanism used in inpatient healthcare (institutional healthcare in Slovakia): https://www.cksdrg.sk/sk/stranka/zakladne-informacie .

[2]Total expenditures from the public health insurance (PHI) system, including expenditures related to the Covid-19 pandemic covered by public health insurance (approximately EUR 100 million will be spent on testing and vaccination in 2022).

[3]These are deaths preventable by the provision of effective and timely healthcare. This also includes interim medical examinations and treatment after the outbreak of a disease.

The main objective of the 2019 Healthcare Spending Review was to identify the best ways to improve patient health by enhancing efficiency with the available resources. An emphasis was placed on finding measures to increase value in healthcare, while further reducing inefficient spending. The ambition behind the Review was to implement financing arrangements that are based on the determination of the total necessary expenditures in the health sector and to improve the monitoring of performance and collection of data. A growth of healthcare expenditures above the rate of inflation is to be subject to the demonstration of a positive effect on the performance. Further, the identified main prerequisites for a faster growth of the sector include stopping the rise in hospitals' debts, changing the existing automatic salary increase mechanism for healthcare workers, setting prescription limits and ensuring the full functioning of the DRG and eHealth systems. Reducing the number of treatable deaths to the average of the V3 countries remained the core performance target.

The spending review measures are incorporated in the general government budget and the budgeting of healthcare expenditures is gradually being standardised in line with international good practice. Starting from 2020, the approach to healthcare financing has changed towards a greater emphasis on the sector's actual needs and more predictable financing. Payments for state-insured persons have only a deficit settlement function: the amount of a payment is determined as the difference between the sector's actual needs and the amount of contributions received from the active population. Legislation was eventually recently adopted that underpins budgeting based on types of healthcare through the so-called programme budgeting approach. Another, no less important step was enhancing the integrity of data collected from the public health insurance funds (PHIFs), including the successful unification of reporting for the main types of healthcare. Today, works are underway on a unified methodology for forecasting health insurance data, which will allow the state to plan and budget public health insurance more accurately. The professional public in the health sector has noted the review and a majority of it perceives its necessity as a means to promote confidence as to the effective management of public resources.

In line with the above, this document updates the 2019 Healthcare Spending Review measures and presents a menu of cost-saving and value-based measures that can be incorporated into the general government budget 2023-2025. The review update covers 96% of the total expenditures from public health insurance (PHI), in the amount of approximately EUR 5.7 billion, for 2021.

The review update has identified a total saving potential of EUR 425.5 million out of the total analysed public expenditures on healthcare[4] in the amount of almost EUR 5.5 billion. The major part of this is savings of EUR 175.4 million from improvements in the inefficient use of pharmaceuticals. They can be achieved by increasing cost-effectiveness, facilitating the introduction of generics and biosimilars, or modifying the reimbursement exception system for pharmaceuticals through the current amendment to the Act No 363/2011. With the introduction of price and volume benchmarking and the elimination of redundant procedures in the area of shared examination and treatment services (SETS), savings in the amount of EUR 39.1 million could be achieved. A significant saving potential also arises in the area of specialised outpatient care (SOPC) from a reduction in the number of visits (EUR 86.3 million), while this is conditional on the implementation of the foreseen value-based measures to support general outpatient care (GOPC) until 2030. At the same time, we see a significant potential for savings in the core operations of the state-owned public health insurance fund (*Všeobecná zdravotná poisťovňa* (*VšZP*)), which is achievable, in particular, through improving the pricing of services, aligning unit rates of inpatient healthcare with the average of the other PHIFs, or extending the central procurement of pharmaceuticals. The total achievable savings in this area amount to EUR 260.3 million. The cost-saving policy measures have been complemented by an updated list of value-based measures, which are either inevitable for the implementation of the cost-saving policy measures, or have a value-for-money benefit and address the biggest challenges faced by the healthcare sector.

This material is a result of cooperation between the research resources of the Ministry of Finance of the Slovak Republic, namely the Value for Money (VfM) unit, and the Institute of Healthcare Analysis (IHA) of the Ministry of Health of the Slovak Republic (MH SR). The document was also consulted with an

[4] Healthcare expenditures from PHI

expert panel. A great emphasis was placed in the review update on data-based quantifications from official sources and the methodology employed was transparently discussed with experts in the health sector. The acceptance, or at least tolerance, of the above-mentioned measures within the sector and their transparent communication to the key actors are important prerequisites for the successful implementation of the measures. Each measure is divided into a series of main implementation steps that are to lead to the realisation of the measure.

For the successful implementation of the review measures, we recommend, in particular:

- Incorporating the review update into the general government budget for 2023-2025 and updating it annually.
- Preparing a detailed implementation and control plan for the implementation of the measures by the. Implementation Unit of the Government Office of the Slovak Republic in cooperation with the VfM unit (MF SR), IHA and other functions in the relevant subject areas.
- Providing conditions to enable the implementation of the measures by defining the responsible persons and allocating sufficient resources to the implementation of the measures.
- Incorporating the review into the ministry's long-term vision and strategy.
- Actively communicating the measures, and the cost-saving ones in particular.
- Supporting all follow-up materials resulting from the review by an objective impact assessment.
- Directing available resources primarily to the implementation of the value-based measures.
- Continuing to build up a uniform and high-quality database, including consistent international data comparisons.

Table 1: Cost-saving policy measures with an impact on PHI broken down according to the programme structure

	Measures with an impact on PHI			
	2023-2025 update (EUR million)			Potential (EUR million)
	2023	2024	2025	
Total measures with an impact on PHI	-126.9	-241.1	-308.6	-425.5
Pharmaceuticals and dietary food	-73.3	-134.0	-183.7	-183.7
Medical devices	-4.6	-8.9	-13.2	-13.2
Inpatient healthcare	-1.6	-3.2	-4.8	-12.8
Shared examination and treatment services (SETS)	-34.8	-69.6	-81.3	-81.3
Specialised outpatient care	-12.6	-25.4	-25.6	-111.9
Emergency Healthcare service	0	0	0	-22.6

Table 2: Cost-saving policy measures without an impact on PHI

	Measures without an impact on PHI			
	2023-2025 update (EUR million)			Potential (EUR million)
	2023	2024	2025	
Total measures without an impact on PHI	-89.8	-169.7	-242.8	-242.8
Savings in hospitals				
Inpatient healthcare	-28.2	-46.5	-57.9	-57.9
Measure with an impact only on *VšZP*				
Inpatient healthcare	-61.6	-123.2	-184.9	-184.9

Table 3: List of cost-saving policy measures in the health sector

ID	PHI programme	Measure	GGB 2022-2024 (EUR million)			2023 -2025 update (EUR million)			Potential (EUR million)
			2022	2023	2024	2023	2024	2025	
1	Specialised outpatient care/SETS	**Optimisation of healthcare service prices (*VšZP*)**	-	-	-	-33.5	-67.1	-67.1	-67.1
1 a	Specialised outpatient care	***Optimisation of healthcare service prices (VšZP) - SOPC segment***	-	-	-	-12.4	-24.9	-24.9	-24.9
1b	SETS	***Optimisation of healthcare service prices (VšZP) - SETS segment***	-	-	-	-21.1	-42.2	-42.2	-42.2
-	Specialised outpatient care	**Elimination of price differences in SOPC (*VšZP*)**	-10.0	-10.0	-10.0	Replaced by Measure 1			
2	Inpatient healthcare (impact only on *VšZP*, no impact on PHI)	**Optimisation of payments in hospitals (*VšZP*)**	-	-	-	*-61.6*	*-123.2*	*-184.9*	*-184.9*
3	Pharmaceuticals and dietary food	**Extension of the central procurement of pharmaceuticals (*VšZP*)**	-26.0	-26.0	-26.0	*-6.2*	*-8.3*	*-8.3*	*-8.3*
-	Multiple types of healthcare	**Inspection activity, stricter indirect inspections (*VšZP*)**	-14.0	-14.0	-14.0	To be updated based on the evaluation of the *VšZP*'s implementation plan for 2019-2021			
-	Other PHI expenditures	**Operational efficiency improvement (*VšZP*)**	-1.0	-1.0	-1.0				
4	Inpatient healthcare	**Reduction in the number of avoidable hospitalisations to the V3 level**	-5.0	-6.0	-7.0	-1.6	-3.2	-4.8	-12.8
5	Specialised outpatient care	**Reduction of number of SOHC visits**	-12.0	-44.0	-67.0	0	0	0	-86.3
6	Specialised outpatient care	**Obstetrics: less pregnancy examinations**	-1.0	-2.0	-3.0	-0.2	-0.5	-0.7	-0.7
-	Inpatient healthcare	**Obstetrics: less caesarean sections**				Effective savings cannot be quantified because of the existence of the prospective budgeting system			

ID	PHI programme	Measure	GGB 2022-2024 (EUR million)			2023 -2025 update (EUR million)			Potential (EUR million)
			2022	2023	2024	2023	2024	2025	
7	Pharmaceuticals and dietary food	**Year-on-year comparisons of pharmaceutical prices twice a year**	-2.0	-2.0	-2.0	-4.7	-6.5	-8.3	-8.3
8	Pharmaceuticals and dietary food	**Cost-effectiveness of pharmaceuticals (except orphans)**	-36.0	-55.0	-55.0	-10.0	-20.0	-24.9	-24.9
9	Pharmaceuticals and dietary food	**Cost effectiveness of listed orphans**				-2.1	-7.3	-9.9	-9.9
10	Pharmaceuticals and dietary food	**Promotion of generics and biosimilars**	-3.0	-3.0	-3.0	-23.0	-46.0	-69.0	-69.0
11	Pharmaceuticals and dietary food	**Pharmaceuticals subject to exception**	-16.0	-16.0	-16.0	-13.9	-24.5	-35.1	-35.1
12	Pharmaceuticals and dietary food	**Active enforcement of the settlement difference**	-7.0	-7.0	-7.0	-11.3	-11.3	-11.3	-11.3
13	Pharmaceuticals and dietary food	**Overconsumption of pharmaceuticals (antibiotics)**	-2.0	-4.0	-5.0	0	-1.7	-3.3	-3.3
14	Pharmaceuticals and dietary food	**Overconsumption of pharmaceuticals (non-antibiotics)**	-	-	-	0	-2.4	-4.7	-4.7
15	Pharmaceuticals and dietary food	**eHealth: improved prescribing**	-30.0	-30.0	-30.0	-1.3	-2.7	-4.0	-4.0
16	Pharmaceuticals and dietary food	**Inspection activity (interactions, duplicate prescribing, etc.)**	-7.0	-7.0	-7.0	-0.8	-3.3	-4.9	-4.9
17	SETS	**International cost referencing of healthcare services**	-9.0	-9.0	-9.0	-5.0	-7.9	-10.8	-10.8
18	SETS	**Redundant examinations**	-25.0	-25.0	-25.0	-5.3	-10.6	-16.0	-16.0
19	SETS	**Payments for laboratory tests**	-4.0	-10.0	-10.0	-3.4	-6.9	-10.3	-10.3
20	SETS	**Reduction in PCR test costs**	-25.0	-25.0	-25.0	-2.0	-2.0	-2.0	-2.0
21	Medical devices	**Incontinence products: segregation of healthcare and social care for patients with incontinence**	-9.0	-14.0	-14.0	-2.5	-5.1	-7.6	-7.6

ID	PHI programme	Measure	GGB 2022-2024 (EUR million)			2023 -2025 update (EUR million)			Potential (EUR million)
			2022	2023	2024	2023	2024	2025	
-	Medical devices	**Central procurement of incontinence products (*VšZP*)**	-2.0	-2.0	-2.0	Replaced by Measure 21			
22	Medical devices	**Extension of international price benchmarking**	-4.0	-4.0	-4.0	-0.4	-0.4	-0.4	-0.4
23	Medical devices	**Optimisation of the prescription of medical devices**	-	-	-	-1.7	-3.4	-5.2	-5.2
24	Emergency Healthcare service	**Optimisation of staffing norms**	-	-	-	0	0	0	-22.6
25	Non-PHI	**Extension of the central procurement of pharmaceuticals (MH SR)**	-	-	-	-20.0	-25.0	-32.7	-32.7
26	Non-PHI	**Reimbursed special medical material (SMM): price referencing against the Czech Republic and determination of maximal reimbursement amounts**	-	-	-	-3.7	-7.3	-11.0	-11.0
-	Non-PHI	**Reimbursed SMM: extension of international price referencing**	-4.2	-4.2	-4.2	Replaced by Measure 26			
-	Non-PHI	**Reimbursed SMM: definition of a basic functional type**	-2.0	-4.0	4.0	Replaced by Measure 26			
-	Non-PHI	**Reimbursed SMM: reimbursements based on cheapest purchase prices**	-3.7	-3.7	-3.7	Replaced by Measure 26			
27	Non-PHI	**Reimbursed SMM: central procurement by the MH SR**	-	-	-	-2.5	-2.5	-2.5	-2.5
28	Non-PHI	**Non-reimbursed SMM and medical devices: definition of nomenclature and negotiation of prices**	-	-	-	-2.0	-11.7	-11.7	-11.7
-	Non-PHI	**Reduction in hospitals' operating costs**	-3.1	-6.1	-6.1	Because of the inflation and rising energy prices, the measure cannot be implemented.			

2 Update of costs-saving policy measures

Measure with an impact on *VšZP*'s financial management

Measure 1: Optimisation of prices of healthcare services in the outpatient healthcare and SETS segments

Description: According to the microdata of the National Health Information Centre (NCZI), reimbursements for certain healthcare services from *VšZP* are above the average of the other PHIFs in Slovakia. Accordingly, there is a room for the largest PHIF to reduce costs for PHI in contracts with major healthcare providers in future years.

Methodology: The average reimbursements paid by *VšZP* for healthcare services that make the highest proportions of the total volume of reimbursements were individually compared with the average of the other two PHIFs using NCZI microdata[5]. The calculations also reflect healthcare services for which reimbursements from *VšZP* are lower than those paid by the other two PHIFs. The saving estimate was, therefore, calculated as an increase or decrease in the reimbursement from *VšZP* paid for each service in comparison to the price average of the other PHIFs, multiplied by the number of the reviewed services reimbursed by *VšZP* for 2021. Savings were identified in the areas of SOPC and SETS (imaging, laboratory and other services[6]).

Savings:

Healthcare type	Reimbursements from *VšZP* for the reviewed services (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
Total	882.1	-67.1	3	0	-33.5	-67.1	-67.1
SOPC	401.4	-24.9	3	0	-12.4	-24.9	-24.9
SETS	431.8	-42.2	3	0	-21.1	-42.2	-42.2

Implementation steps:

- The calculation is based on the assumption of a two-year roll-out period, starting from 2023. During that time, it is necessary to amend *VšZP*'s contracts with healthcare providers to reduce the rates for certain services.

Measure 2: Optimisation of payments in hospitals

Description: The measure does not generate PHI savings but a fairer redistribution of available inpatient healthcare resources between the PHIFs, with a potential improvement of *VšZP*'s financial performance. Payments to hospitals for a comparable patient differ significantly between the PHIFs, which is due to a poor optimisation of reimbursement arrangements. *VšZP* pays the most on average; it has the highest average payment amount for e.g. general hospitals or oncology institutes. *Dôvera* has the highest average payment amount for cardiovascular institutes.

Table 4: Comparison of the PHIFs' average payments to hospitals (2020, average unit cost of DRG in EUR)

	VšZP	*Dôvera*	Union	Average
Specialised institutes: oncology institutes	2,292	1,710	1,678	2,100
Specialised institutes: cardiovascular institutes	2,729	2,864	2,045	2,714
Specialised healthcare institutions	2,458	2,151	1,727	2,321

[5] A measure under the Memorandum signed between the Ministry of Finance of the Slovak Republic and the Ministry of Health of the Slovak Republic: https://www.mfsr.sk/files/sk/media/tlacove-spravy/memorandum-o-spolupraci_mf_mz.pdf .

[6] Breakdown by SETS type based on the Yearbook of the Healthcare Surveillance Authority (HSA) on PHI Performance for 2020: *Správa o stave vykonávania verejného zdravotného poistenia 2020*.

General hospitals	1,860	1,537	1,413	1,730
Total	**1,973**	**1,660**	**1,476**	**1,844**

Source: Elaborated by VfM unit/IHA based on MH SR's data

The financing of hospitals is still based on the prospective budgeting system (PBS) with which the amount of the monthly payment for inpatient care is agreed in a contract in advance for the next period. The PBS reimbursement mechanism is suitable for a period of transition to a DRG-based system to plan the real need for healthcare services, as it reduces "unnecessary" services and, at the same time, streamlines financial planning for both hospitals and the PHIFs. On the other hand, if the reimbursement is not linked to performance, the motivation to accept patients and provide more complex healthcare is reduced, which eventually limits saving efforts. After the transition period, it is thus recommended to enhance efficiency by switching to payments based on DRG cases, assessing hospitals according to their real performance and analytically comparing the individual hospitals.

Methodology: The calculation is based on a comparison of the PHIFs' payments to hospitals, taking into account the case-mix based on the DRG categorisation. The savings result from the reduction of the average rate of *VšZP* (adjusted for the case-mix) to the average of the other two PHIFs[7], particularly for general hospitals, specialised medical facilities, oncology institutes and cardiovascular institutes.

Savings[8]:

Total payments from *VšZP* to hospitals (EUR million, 2021)	Saving potential with an impact only on *VšZP*[9] (EUR million)	Implementation horizon in years	2022	2023	2024	2025
1,587.9	-184.9	3	0	-61.6	-123.2	-184.9

Implementation steps: (relation to DRG cultivation as a value-based measure):

- Modification of *VšZP*'s PBS contracts with hospitals: outpatient care and SETS based on a variable concept.
- Modification of *VšZP*'s PBS contracts with hospitals: transition to pricing based on the DRG-based average rates of the other PHIFs.
- After the DRG roll-out, transition from the PBS payment mechanism to payments for DRG cases.

Measure 3: Extension of the central procurement of pharmaceuticals (*VšZP*)

Description: While *VšZP* dominates the market in A/AS pharmaceuticals[10], the private PHIFs have in their portfolio of centrally procured pharmaceutical items that *VšZP* reimburses, but does not procure them centrally. The aim of this measure is to counterbalance these differences and calculate the amount of savings that *VšZP* would achieve by procuring centrally all pharmaceuticals reimbursed by the private PHIFs.

Methodology: The basis of the calculation is a comparison of effective central procurements between the three PHIFs. Pharmaceuticals that were centrally procured by the private PHIFs but not by *VšZP* have been subjected to a more detailed analysis. For pharmaceuticals that are procured centrally by the private PHIFs and are also reimbursed by *VšZP*, there is no objective reason for *VšZP* not procuring them centrally, too. The amount attributable to these pharmaceuticals in 2021 is EUR 27.5 million. The average savings from *VšZP*'s central procurement in the reviewed period was 35%. In most cases, central procurement will increase the consumption

[7] A measure under the Memorandum signed between the MF SR and the MH SR:https://www.mfsr.sk/files/sk/media/tlacove-spravy/memorandum-o-spolupraci_mf_mz.pdf .
[8] This is only a redistribution of resources in the PHI system with an impact on the financial management of VšZP.
[9] The outcome is not savings on expenditures from PHI, but a fairer redistribution of resources in inpatient healthcare. With the optimisation of VšZP's payments to hospitals, the payments of the other PHIFs should increase correspondingly.
[10] These are pharmaceuticals that must be administered by a healthcare worker when administered to outpatients. They are reimbursed by public health insurance funds as additional items on top of reimbursements for patient care services.

of pharmaceuticals and, therefore, a lower percentage was applied in the calculation of savings, namely 30%, which generated savings of EUR 8.3 million. The savings are expected to be achieved effectively only from the second quarter of 2023, as the procurement process takes at least 3 to 4 months.

Savings:

Reimbursements from *VšZP* (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
27.5	-8.3	2	0	-6.2	-8.3	-8.3

Implementation steps:

- Send *VšZP*'s request concerning the launch of central procurement to the MH SR (in the course of 2022).
- Adopt a legislative amendment: non-disclosure of prices and compulsory purchase of A/AS pharmaceuticals.
- Implement central procurement and consumption monitoring from 2023.

Cost-saving policy measures to improve the efficiency of both outpatient and inpatient care

Measure 4: Reduction in the number of avoidable hospitalisations to the V3 level

Description: Patients in Slovakia are excessively hospitalised with diseases that can largely be effectively treated through high-quality outpatient care. Slovakia exceeds the average of the V3 countries in the number of hospitalisations for high blood pressure, heart failure, diabetes and asthma. As regards chronic obstructive pulmonary disease, the number of hospitalisations in Slovakia is, in contrast, lower than the V3 average. Considering a benchmark at the EU average level, the saving potential is EUR 34 million.

Methodology: The gap in hospitalisations for the four diagnoses mentioned above in respect of which Slovakia is lagging behind the V3 average was calculated on the basis of OECD data. The number of excess hospitalisations for the four diagnoses (hypertension, heart failure, diabetes and asthma) was calculated as difference against the V3 average based on OECD data. This number was subsequently multiplied for each diagnosis by the average hospitalisation costs for the given diagnosis for 2021 based on NCZI microdata[11].

Savings:

PHI reimbursements for the diagnoses (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
36.5	-12.8	8	0	-1.6	-3.2	-4.8

Implementation steps: (relation to the strengthening of the general outpatient care network as a value-based measure):

- Regular monitoring, strengthening of the general outpatient care network (GOPC) (number of doctors and nurses, material and technical resources and extended scope of practice), setting-up incentive mechanisms for GOPC.
- It will be necessary to coordinate this measure with the GOPC support value-based measure, as defined in the upcoming General Outpatient Care Concept by 2030.

[11] NCZI: National Health Information Centre

- It is assumed that support for innovative therapies (amendment to the Act No 363/2011 on medicinal products approved in June 2022) will also contribute to the implementation of this measure.

Measure 5: Reduction in the number of specialised outpatient care visits

Description: Patients in Slovakia visit specialist doctors more often than patients in the V3 countries, while general doctors, on the contrary, are visited less often. The number of visits to specialist doctors in Slovakia is 2.9 visits per inhabitant higher than in the V3 countries, while the number of visits to general practitioners is lower by 0.8 visits per inhabitant[12]. The reason is that a part of primary care is provided by specialists in Slovakia, while abroad it is provided by general practitioners who have a wider scope of practice. However, to reach the V3 level, a total reduction in the number of visits to outpatient clinics is needed since some of visits today are entirely unnecessary.

Methodology: The difference in the number of visits to SOPC practitioners per inhabitant compared to the V3 average was calculated using national sources. The data are for 2020, except for the Czech Republic, which are for 2017. The numbers are multiplied by the median payment per visit to a specialist (selected specialities[13]) in 2021 based on NCZI microdata. The median is used instead of the mean because of a small number of exceptionally high reimbursements that distort the mean (assuming that these expensive specialist services cannot be substituted by general practitioners' services). A part of the reduction in visits would probably be transferred to GOPC and this is not considered in the calculation, but this would will be covered by the GOPC support value-based measure (and matching GOPC visits to the V3 average would cost EUR 15.5 million).

Savings:

PHI reimbursements (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
1,003.9	-86.3	8	0	0	0	0

Implementation steps: (relation to the strengthening of the general outpatient care network as a value-based measure):

- It will be necessary to coordinate this measure with the GOPC support value-based measure. The starting point is the upcoming General Outpatient Care Concept by 2030.
- Savings in the years 2023 to 2025 will be zero, as it is necessary to first implement the GOPC-related measures (transfer of SOPC services, increase in resources), and then set-up incentive mechanisms for healthcare providers.

Measure 6: Obstetrics: less pregnancy examinations and caesarean sections

Description: Slovak patients undergo more prenatal examinations than patients in other European countries. The Healthcare Spending Review II identified several redundant examinations that could be fully omitted. In the meantime, however, standardised obstetrical protocols have been adopted and the redundant examinations identified in the Review II are included in the recommended examinations for standard prevention, diagnosis and treatment protocols (SPDTP).

This measure also includes a reduction in the number of caesarean sections, which are above the WHO's recommendation (10 to 15%). Due to the fact that the financing of inpatient healthcare is based on the prospective budgeting system, it is currently not possible to quantify the savings to result from this measure.

Methodology: SPDTP recommend specific prenatal examinations, including the number of repetitions of a specific examination before birth. Three prenatal examinations were analysed - AFP test, CTG and USG, and

[12] According to the national data of the Czech Republic, Hungary and Poland.
[13] In NCZI microdata from eHealth, this concerns the following codes of medical specialities: 003, 004, 009, 010, 013, 015, 017, 018, 037, 038, 049, 050, 064, 068, 069, 070, 104, 106, 107, 116, 140, 153, 155, 156, 169, 206, 215, 319, 336.

it was determined how many examinations were performed per patient in 2020 beyond the scope recommended in SPDTP. The number of redundant examinations was multiplied by the average price per procedure based on NCZI microdata.

Savings:

Reimbursements (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
6	-0.7	3	0	-0.2	-0.5	-0.7

Implementation steps:

- Monitoring of compliance with the recommended SPDTP.
- Introduction of incentive mechanisms for healthcare providers; inspection activity by the PHIFs focused on compliance with the SPDTP.

Pharmaceutical cost-saving measures

Measure 7: Year-on-year comparisons of pharmaceutical prices twice a year

Description: Pursuant to the Act No 363/2011 on medicinal products, the proposed official price of a pharmaceutical must not exceed the European Reference Cost (ERC), which is calculated as the arithmetic average of the three lowest prices among the official prices of the pharmaceutical in other Member States. The Act also establishes a methodology for specific cases where such three prices are not available. The MH SR initiates the international comparison of prices of medicinal products once or twice a year (or more times, but not for identical groups of products).

Methodology: A review was made for pharmaceuticals whose ERCs had been documented by the marketing authorisation holders (MAH) in proceedings concerning the international price referencing implemented since January 2019 to check whether an ERC reduction had led to a decrease in the PHIFs' reimbursements for the pharmaceutical no later than six months after the international price comparison. The difference in the reimbursement paid for an individual pharmaceutical was multiplied by the quarterly consumption of the given pharmaceutical dispensed by pharmacies to patients with reimbursement. Each international price comparison further increases the savings by EUR 1.8 million per year on average. The calculations for 2022 are based on the consumption of pharmaceuticals for 2021 and the potential savings thus may theoretically be lower because of effects of unpredictable factors that may reduce the consumption of a given pharmaceutical, such as supply chain problems.

Savings:

PHI reimbursements (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
1,255.2	-8.3	3	-2.9	-4.7	-6.5	-8.3

Implementation steps:

- The measure is currently being implemented.

Measure 8: Cost-effectiveness of pharmaceuticals (except orphans)[14]

Description: Since 2011, compliance with cost-efficiency requirements has been a necessary criterion for the inclusion of a pharmaceutical in the positive reimbursement list. However, pharmaceuticals included in the

[14] The measure does not apply to pharmaceuticals referred to as orphans which were introduced under the amendment to the Act No 363/2011 with effect from 2018, as these are covered by a specific measure (Measure 9).

positive reimbursement list under the old rules or referring to the same reference group may not have been subjected to this test. The initial spending review of 2016 identified 147 such pharmaceuticals, which represent potential savings of EUR 42.6 million out of the total reimbursement amount of EUR 283 million. These pharmaceuticals are referred to as “potentially cost-ineffective pharmaceuticals” (PCIP).

However, the original idea of making new pharmaco-economic calculations and delisting pharmaceuticals that do not meet this requirement has not been implemented after 2016, which is due to several factors, such as discontinuation of comparators, pertinence of pharmaceuticals to different pharmaco-economics, complications on the part of the MH SR and others.

The amendment to the Act No 363/2011 of June 2022, however, allows the MH SR to request the demonstration of the cost-effectiveness of pharmaceuticals, and those failing to comply may be excluded from the reimbursement list. But a MEA[15] may be signed for such a pharmaceutical, which is non-public and thus still "hides" the price levels of the MAH. This mechanism is supervised by the newly formed National Institute for Value and Technology in Healthcare (NIHO).

Methodology: Compared to 2015, the entry of generics and central procurement have helped to reduce the total volume of pharmaceuticals of the PCIP category. In 2021, it amounted only to EUR 198.8 million. After an analysis of pharmaceuticals that are centrally procured (with significant discounts) or are near to genericisation (or the generic is already in the process of inclusion in the reimbursement list), payments for the remaining pharmaceuticals amount to EUR 99.8 million. If a 25% saving on these pharmaceuticals was achieved through MEAs, which is a level generally expected of central procurement and the minimum level negotiated for the reimbursement of pharmaceuticals under an exception, the total savings for PHI would amount to EUR 24.9 million.

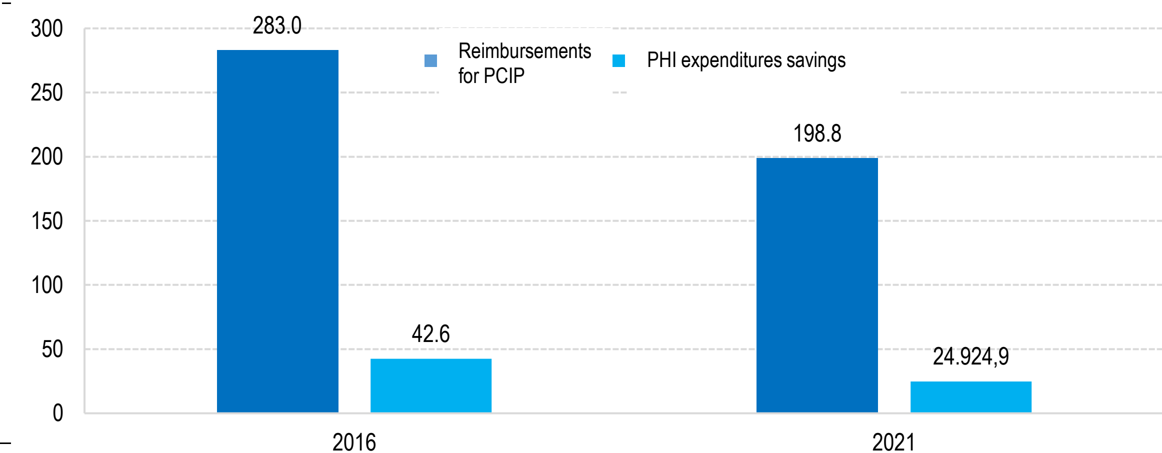
Savings:

PHI reimbursements (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
198.8	-24.9	3	0	-10.0	-20.0	-24.9

Implementation steps:

- Launching of a call for the recalculation of cost effectiveness by the MH SR. Control by NIHO.
- Preparation of MEAs by the MH SR and MAHs, submission to the Reimbursement Listing Committee and subsequent monitoring (with an effect from 2023).

Graph 3: Comparison of the volume of payments for PCIP and savings between 2016 and 2021 (in EUR million)



[15] Managed Entry Agreement

Effects of the amendment to the Act No 363/2011 on medicinal products

Measure 9: Cost effectiveness of reimbursed orphans[16]

Description: Savings on orphans due to their exclusion from the reimbursement list. This is an update on the impact of pharmaceuticals that entered the system as so-called orphans under the 2018 amendment to the Act No 363/2011. These pharmaceuticals are intended for the diagnosis, prevention or treatment of life-threatening or very serious diseases that are rare, or pharmaceuticals that would not have been developed without special incentives for economic reasons.

Methodology: This is an expert estimate taken from the analysis of the impact of the amendment to the Act No 363/2011 on medicinal products which was approved by the Parliament in June 2022[17].

Savings:

PHI reimbursements (EUR million, 2021)[18]	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
52.2	-9.9	3	0	-2.1	-7.3	-9.9

Implementation steps: (relation to the support for innovative therapies as a value-based measure):

- Implementation of the approved amendment to the Act No 363/2011 effective from August 2022.
- Review of orphans included in the reimbursement list according to the amendment to the Act No 363/2011.

Measure 10: Promotion of generics and biosimilars

Description: Competitive pressure after the expiry of patent rights is supposed to naturally reduce the prices of pharmaceuticals with the same active substance. In the course of 2019, there were changes in reimbursements for pharmaceuticals included in the reimbursement list, mainly due to the entry of generics and biosimilars, international price referencing and a revision of the reimbursement groups. However, by implementing additional measures, it is possible to further improve the efficiency of PHI expenditures through a higher use of generics and biosimilars.

Methodology: The calculation is taken from the INEKO publication *Analysis of the State of and Options for a Wider Use of Biosimilar Medicines in Slovakia*[19] and it suggests an annual saving potential between EUR 25 million and 40 million. This potential was adjusted for savings resulting from central procurement, which are reflected under Measure 3 Extension of the central procurement of pharmaceuticals (*VšZP*). This includes the measures that need to be adopted under the Acts No 362/2011 and No 363/2011 and the related implementing laws:

- A more efficient review of PHI reimbursements for pharmaceuticals within reimbursement groups with the same active substance but a different route of administration.
- Re-assessment of the cost-effectiveness of pharmaceuticals previously included in the reimbursement list whose prices have fallen due to the entry of competitors.
- Re-assessment of the cost-effectiveness of pharmaceuticals with similar indication restrictions using the so-called comparators.
- Entry of other biosimilar medicines into the market.

Savings:

[16] The pharmaceuticals in question met the definition of an "orphan" according to the Slovak legislation then in force, not according to the MEA.
[17] https://www.nrsr.sk/web/Default.aspx?sid=zakony/zakon&MasterID=8697.
[18] According to the impact analysis of the amendment to the Act No 363/2011: https://www.nrsr.sk/web/Default.aspx?sid=zakony/zakon&MasterID=8697.
[19] INEKO (2021): Analysis of the State of and Options for a Wider Use of Biosimilar Medicines in Slovakia .

PHI reimbursements (EUR million, 2021)[20]	Potential savings (EUR million)	Implementation horizon in years	2022	2023	2024	2025
1,255.2	-69.0	3	0	-23.0	-46.0	-69.0

Implementation steps: (relation to the support for innovative therapies as a value-based measure):

- Implementation of the approved amendment to the Act No 363/2011 with effect from August 2022, including the monitoring and capping of the total expenditures on pharmaceuticals.
- Review of the Ministerial Order No 5/2019: adoption of legislation to determine the minimum share of centrally procured pharmaceuticals for newly diagnosed patients and existing chronic patients and, at the same time, to introduce both positive and negative incentives to support compliance and monitor compliance.
- Implementation of the measures proposed in the *Analysis of the State of and Options for a Wider Use of Biosimilar Medicines in Slovakia* INEKO Study.

Measure 11: Pharmaceuticals subject to exception

Description: Currently, a majority of new and innovative pharmaceuticals in Slovakia are reimbursed under so-called exception procedures in which the PHIFs use their own discretion to decide whether and in what amount a pharmaceutical is to be reimbursed. At the same time, there is no direct cap on expenditures related to pharmaceuticals subject to exceptions and such expenditures have been continuously rising in recent years.

The approved amendment to the Act No 363/2011 on medicinal products of June 2022 supports the inclusion of innovative pharmaceuticals in the reimbursement list (transfer of pharmaceuticals from the reimbursement exception system to the regular reimbursement system) and defines a cap on expenditures on pharmaceuticals subject to exceptions as a percentage of the total expenditures on pharmaceuticals, with a gradual increase in the years 2023-2025 (3.9% in 2023, 2.9% in 2024 and 1.9% in 2025).

Methodology: This calculation is taken from the analysis of the effects of the amendment to the Act No 363/2011 on medicinal products which was approved by the Parliament in June 2022[21].

Savings:

PHI reimbursements (EUR million, 2021)[22]	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
51.0	-35.1	3	10.0	-13.9	-24.5	-35.1

Implementation steps: (relation to the support for innovative therapies as a value-based measure):

- Implementation of the approved amendment to the Act No 363/2011 effective from August 2022.

Measure 12: Active enforcement of the settlement difference

Description: Where the real payment exceeds the contingent payment determined for a pharmaceutical or jointly assessed pharmaceuticals, the MAH is obliged to pay the PHIF an amount equal to the difference between the real payment and the contingent payment, which is referred to as settlement difference[23]. The

[20]According to the impact analysis of the amendment to the Act No 363/2011: https://www.nrsr.sk/web/Default.aspx?sid=zakony/zakon&MasterID=8697.
[21] https://www.nrsr.sk/web/Default.aspx?sid=zakony/zakon&MasterID=8697.
[22]According to the impact analysis of the amendment to the Act No 363/2011: https://www.nrsr.sk/web/Default.aspx?sid=zakony/zakon&MasterID=8697.
[23] As defined in Section 98i of the Act No 363/2011 on medicinal products: https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2011/363/.

active enforcement of this settlement difference for conditionally listed pharmaceuticals will ensure a one-time saving on expenditures (or, more precisely, an increase in revenues) of the public health insurance system.

Methodology: This calculation is taken from the analysis of the effects of the amendment to the Act No 363/2011 on medicinal products which was approved by the Parliament in June 2022[24].

Savings:

PHI reimbursements (EUR million, 2021)[25]	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
1,255.2	-11.3	1	0	-11.3	-11.3	-11.3

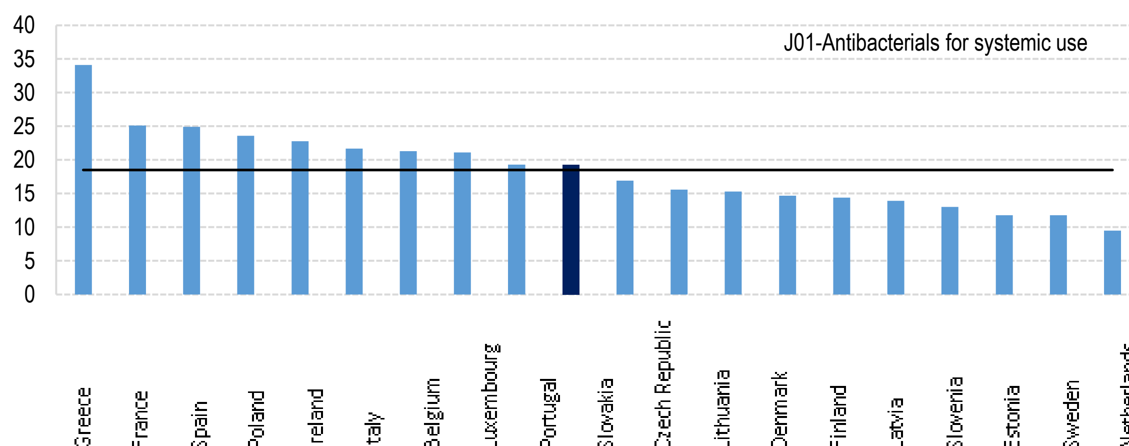
Implementation steps: (relation to the support for innovative therapies as a value-based measure):

- Implementation of the approved amendment to the Act No 363/2011 effective from August 2022.

Measures to reduce the consumption of pharmaceuticals

Measure 13: Overconsumption of pharmaceuticals (antibiotics)

Description: Patients in Slovakia consume more antibiotics per inhabitant than in the Czech Republic and Hungary. The difference is even more pronounced in comparison to the Scandinavian countries. By saving the per-capita amount of antibiotics, it is possible to reduce spending from the public health insurance system.



Source: OECD Pharmaceutical market

Methodology: A comparison of the standard doses of medicinal products (SD) was made between the Slovak Republic and the Czech Republic for each pharmaceutical in the ATC group J01. The SD consumption for each ATC7 group of antibiotics dispensed by pharmacies in the Czech Republic in 2021 was reduced by the application of a coefficient reflecting the ratio between the official population of the Czech Republic and the Slovak Republic in 2021. The resulting consumption amounts were compared with the amounts for the same groups consumed in the Slovak Republic in 2021. Outliers, i.e. data for the Czech Republic that were significantly underestimated (overconsumption of over 40,000% for Cefixime J01DD08), were excluded. The savings were quantified as the overconsumption in SD for a given group multiplied by the weighted average of the reimbursements paid by PHIFs per SD of the given group (based on the quarterly consumption of the individual pharmaceuticals).

[24] https://www.nrsr.sk/web/Default.aspx?sid=zakony/zakon&MasterID=8697.
[25] According to the impact analysis of the amendment to the Act No 363/2011: https://www.nrsr.sk/web/Default.aspx?sid=zakony/zakon&MasterID=8697.

The potential savings on the PHIFs' reimbursements for antibiotics which would result from a reduction in consumption (SD) per inhabitant to the level of the Czech Republic amounts to EUR 3.3 million. However, the cost-saving measure needs to be supported by a value-based measure (e.g. full reimbursement and promotion of CRP testing; incentives directly targeting doctors to reduce the prescribing of ATB). Another risk of this quantification is the fact that there is a 20% lower incidence of confirmed bacterial infections in the Czech Republic compared to Slovakia (the problem is mainly the east of Slovakia).

Savings:

PHI reimbursements for the relevant group of pharmaceuticals (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
15.7	-3.3	3	0	0	-1.7	-3.3

Implementation steps (relation to the extension of mandatory pre-prescription testing and promotion of reduction in prescribing as value-based measures):

- Full reimbursed CRP testing by general practitioners and during hospitalisation in case of reasonable suspicion of bacterial infections, which would reduce the number of cases of antibiotic resistance in a long term.
- MH SR: analysis of the overconsumption of pharmaceuticals and proposals for measures (Behavioural Team[26]) to reduce patients' pressure on prescribing antibiotics.
- Introduction of incentives targeting specific doctors - return of a part of the amount saved through reduced overconsumption of antibiotics.

Measure 14: Overconsumption of pharmaceuticals (non-antibiotics)

Description: Savings on the PHIFs' payments which will arise from the reduction of the per-capita SD consumption of pharmaceuticals other than antibiotics to the level of the Czech Republic. The risk associated with the implementation lies in the extent to which the prescribing of pharmaceuticals is controllable. If a patient receives a prescription, the pharmaceutical is automatically picked up, regardless of the amount of the patent's co-payment.

Methodology: The potential annual savings on the PHIFs' payments in the event of a decrease in the per-capita SD consumption of pharmaceuticals of the individual ATC7 groups to the level of the Czech Republic would be almost EUR 60 million and the highest savings would be those on common cholesterol and blood pressure medications. Because of differences in prescribing habits across countries (different preferred pharmaceuticals for the same diseases, different approaches to dosage), the ATC1 group B was identified as the only one comparable between the Slovak Republic and the Czech Republic, with savings amounting to EUR 4.7 million. The SDs were compared between the Slovak Republic and the Czech Republic for each pharmaceutical of the ATC1 group B. The consumption in SD for each ATC7 group of pharmaceuticals dispensed by pharmacies in the Czech Republic in 2021 was reduced by the application of a coefficient reflecting the ratio between the official population of the Czech Republic and the Slovak Republic in 2021. The resulting consumption amounts were compared with the amounts for the same ATC7 groups consumed in the Slovak Republic in 2021. The savings were quantified as the overconsumption in SD for a given ATC7 group multiplied by the weighted average of the reimbursements paid by PHIFs per SD of the given ATC7 group (based on the quarterly consumption of the individual pharmaceuticals).

Savings:

[26] The Behavioural and Experimental Economic Team (BEET) of the Ministry of Health of the Slovak Republic (https://www.health.gov.sk/?beet).

PHI reimbursements for the relevant group of pharmaceuticals (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
232.3	-4.7	3	0	0	-2.4	-4.7

Implementation steps (relation to the extension of mandatory pre-prescription testing and promotion of reduction in prescribing as value-based measures):

- Inspection activity focused on the potential over-prescribing of pharmaceuticals of the ATC1 group B, with the saving effect achievable from 2024.
- MH SR: analysis of the overconsumption of pharmaceuticals and proposals for measures (Behavioural Team) to reduce patients' pressure on the prescribing of pharmaceuticals.
- Introduction of incentives targeting specific doctors - return of a part of the amount saved through reduced overconsumption of pharmaceuticals.

Measure 15: Improved prescribing based on eHealth data

Description: Savings resulting from improved prescribing of pharmaceuticals based on eHealth data in the ePrescribing and ePrescription modules.

Methodology: An analysis of the consumption of individual pharmaceuticals was made over a set of pharmaceuticals selected by the Pharmaceutical Section of the MH SR, from which pharmaceuticals of the ATC2 group J01 (antibiotics) and ATC1 group B were excluded in order to avoid overlapping with Measures 13 and 14. With regard to the possible overlap with Measure 16, the calculation of savings was made using a conservative approach, which disregards the possible extension of the list of pharmaceuticals based on defined SDs (see the proposal in the implementation steps). Controlled pharmaceuticals are those which, according to the Summary of Product Characteristics (SPC), have the same dosage for all persons and are administered orally. The annual consumption for all persons to whom a pharmaceutical was prescribed is calculated as the sum of the prescribed SDs. Overconsumption arises if this value exceeds 365, i.e. the number of days in a year. As the next step, a check is made with regard to the number of packs to see whether the overconsumption is not caused only by the size of a pack (for example, if one pack of a pharmaceutical contains 200 SDs, a patient may ask for two packages a year with a total of 400 SDs, but this cannot be considered overconsumption). There would be overconsumption if the patient received more than two packs of the given pharmaceutical per year. The saving is calculated as the difference between the prescribed number of packs and the maximum annual number of packs, multiplied by the price of the pack.

Savings:

PHI reimbursements (EUR million, 2021)[27]	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
1,255.2	-4.0	3	0	-1.3	-2.7	-4.0

Implementation steps (relation to the extension of mandatory pre-prescription testing and promotion of reduction in prescribing as value-based measures):

- Extension of the ePrescription module to allow checking the remaining amount of SDs, with the saving effect achievable from 2023.

[27] According to the impact analysis of the amendment to the Act No 363/2011: https://www.nrsr.sk/web/Default.aspx?sid=zakony/zakon&MasterID=8697.

- The extension and particularisation of the definition of the maximum dose of a pharmaceutical by the Reimbursement Listing Committee would enable extending the narrow expertly defined list of included pharmaceuticals to include all, or at least a significantly broader part of, reimbursed pharmaceuticals (it is not always possible to determine the maximum consumption per patient on the basis of the SD).

Measure 16: Inspection activity (interactions, duplicate prescribing, etc.)

Description: Identification of outliers in the prescribing of pharmaceuticals.

Methodology: For each pharmaceutical code registered by the State Institute for Drug Control (ŠÚKL) being subject to potential over-prescribing, pairs of healthcare institutions and quarters were identified for which the actual number of prescribed packs of the pharmaceutical significantly exceeded the predictions obtained by the application of a statistical model that takes into account the array of the patients' diagnoses. When potential over-prescribing was identified for a healthcare institution - quarter pair, the relevant amount was multiplied by the average price per pack of the pharmaceutical in that healthcare institution during that quarter. The data on pharmaceutical prescriptions were taken from NCZI's databases for 2021.

Savings:

PHI reimbursements (EUR million, 2021)[28]	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
1,255.2	-4.9	3	0	-0.8	-3.3	-4.9

Implementation steps (relation to the extension of mandatory pre-prescription testing and promotion of reduction in prescribing as value-based measures):

- Development of a system to identify potential over-prescribing of pharmaceuticals by healthcare institutions and subsequent inspection activity focused on the potential over-prescribing, with the saving effect achievable from the second half of 2023.

Optimisation of prices and volumes of shared examination and treatment services (SETS)

Measure 17: International cost referencing of MR and CT examination services

Description: The prices of the most frequent imaging services and other SETS[29] with the highest amounts of payments (magnetic resonance (MR), computed tomography (CT) and positron emission tomography (CT-PET))[30] are on average higher than in the Czech Republic. At the same time, there are also substantial differences in prices between healthcare providers in Slovakia. Developing a database for the international comparison of services (similar to what is currently used for pharmaceuticals) would enable a reduction in the prices of these services, with a saving impact on the public health insurance system. As regards the implementation, the reduction of prices to the average of healthcare providers (savings of EUR 5 million) is being considered for 2023, and only from 2024, a price comparison with the Czech Republic is envisaged (additional savings of EUR 5.7 million by 2025). The services relevant to this measure were not included in Measure 1 which envisages comparisons of services between the PHIFs.

Methodology: On the basis of NCZI microdata, reimbursements for selected CT/MR/CT-PET procedures are compared between Slovak health care providers and, at the same time, with reimbursements for equivalent procedures in the Czech Republic (according to the currently published number of points for procedures[31] and

[28] According to the impact analysis of the amendment to the Act No 363/2011: https://www.nrsr.sk/web/Default.aspx?sid=zakony/zakon&MasterID=8697.
[29] Breakdown by SETS type based on the HSA Yearbook of PHI Performance for 2020 (*Správa o stave vykonávania verejného zdravotného poistenia 2020*).
[30] CT procedures (5200, 5202, 5203, 5204b, 5204c, 5205, 5206), MR (5600, 5605, 5605a, 5611c, 5612a), CT-PET (5480, 5481c, 5481d) according to the List of Medical Procedures and Point Values.
[31] https://media.vzpstatic.cz/media/Default/dokumenty/ciselniky/vykony_01355.pdf.

point prices[32]). The comparison is made over the top 20 imaging and other SETS procedures with the highest volumes of payments from the PHIFs in Slovakia. The savings are calculated without regard to the lower prices of some procedures in Slovakia.

Savings:

PHI reimbursements (EUR million, 2021)[33]	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
353.6	-10.8	3	0	-5.0	-7.9	-10.8

Implementation steps:

- An update of the PHIFs' strategy for contracting with healthcare providers is expected in 2023 in relation to a reduction in prices of selected services (including separating CAPEX payments for the purchase of medical devices under grants and EU funding schemes).
- For 2024 and 2025, it is necessary to develop a database for international comparisons of healthcare services (it is presently possible to a limited extent and only with the Czech Republic).

[32] https://www.zakonyprolidi.cz/cs/2021-396 (for MR and CT procedures 896xx and 897xx) and https://www.lkcr.cz/doc/cms_library/kompenzacni-vyhlaska-hodnoty-bodu-as-101412.pdf (for the specialty 407 for CT-PET procedures).
[33] Payments for imaging and other SETS procedures according to NCZI microdata.

Measure 18: Redundant MR and CT examinations

Description: According to OECD data, patients in Slovakia undergo almost a third more MR and CT examinations than the V3 countries. Duplicate and repeated examinations of patients may be one of the reasons. Reducing the volumes of the most frequent MR and CT procedures to the level of the V3 countries represents a saving potential of EUR 16 million. As regards the implementation, it is supposed to start in 2023 and be rolled-out gradually in parallel with the digitisation of the examination ordering and delivery of examination results. The achievement of the full saving potential is expected already in 2025.

Methodology: The difference in the volume of MR and CT procedures between Slovakia and the V3 countries is calculated using OECD data[34]. Patients in Slovakia undergo slightly above 40% more MR procedures and 20% more CT procedures. This difference was applied to selected top MR and CT procedures with the highest volume of payments (a third of the total reimbursement amount for SETS imaging procedures) based on NCZI microdata[35] .

Savings:

PHI reimbursements (EUR million, 2021)[36]	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
240.7	-16.0	3	0	-5.3	-10.6	-16.0

Implementation steps:

- Identification of the most common situations of duplicate examinations in cooperation with practitioners and identification of prevention options in cooperation with the Behavioural Team.
- Definition of standards to determine when examinations need not to be repeated (MH SR).
- Roll-out of the eLab and eReferral ("*eŽiadanka*", electronic referral system) modules (NCZI) to limit duplicate examinations (scheduled for 2023).
- More detailed inspection activity regarding repeated examinations.

Measure 19: Laboratory examinations: reduction of duplicate examinations and international price referencing

Description: In the absence of an electronic examination ordering and result delivery system covering all healthcare providers, duplicate examinations can potentially occur. Some laboratory procedures in the field of genetics are on average more expensive than in the Czech Republic. The estimated saving potential of the elimination of duplicate examinations through the introduction of the eLab and eReferral modules from 2023 is EUR 8.6 million. The potential for savings from reduced prices of services in genetics amounts to EUR 1.8 million and the roll-out is possible in 2024. The services relevant to this measure were not included in Measure 1 which concerns comparisons of services between the PHIFs.

Methodology:

- The estimated savings from the elimination of duplicate testing through the introduction of the eLab module amount to 2% of the total reimbursements of all PHIFs for laboratory tests. The savings were estimated at the level of diagnoses, taking into account the number of patients. The healthcare providers referring patients to SETS examinations that were effectively using the electronic laboratory test result recoding system of *Dôvera* were compared with those not using the system.

[34] OECD Healthcare utilisation.
[35] CT procedures (5200, 5202, 5203, 5204b, 5204c, 5205, 5206), MR (5600, 5605, 5605a, 5611c, 5612a according to the List of Medical Procedures and Point Values.
[36] Payments for imaging procedures according to NCZI microdata.

- Comparison of the prices of selected procedures in the field of genetics with the Czech Republic based on the published point values of the procedures[37] and the respective point rates[38] (BRCA1 and BRCA2 procedures - 9954, 9954A and 9955 according to the List of Medical Procedures and Point Values).

Savings:

PHI reimbursements (EUR million, 2021)[39]	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
438.8	-10.3	3	0	-3.4	-6.9	-10.3

Implementation steps:

- Roll-out of the eLab and eReferral modules (NCZI) to limit duplicate examinations (scheduled for 2023).
- Review of savings from the implementation of the eLab and eReferral modules in 2024 (based on data for 2023).
- Definition of standards to determine when examinations need not to be repeated (MH SR) and modification of the rules for optimising the hospital network with regard to the availability of diagnostics.
- Implementation of the price and volume benchmarking (scheduled for 2024). Creation of a database necessary for the international comparisons of healthcare services (it is presently possible to a limited extent and only with the Czech Republic).

Measure 20: Reduction in PCR test costs

Description: Savings from cost regulation based on significantly lower prices abroad and from a lower volume of tests because of reimbursement restrictions amount to EUR 2 million. The MH SR has issued a guidance restricting the availability of free testing to persons over 60 years of age and to cases referred by doctors[40]. *VšZP* has imposed a limit of one test per 30 days.

Methodology: The estimated savings are based on the assumed number of PCR tests paid for from PHI in the second half of 2022 under the reimbursement restrictions. The average monthly quantity is expected to be 56,283 tests in 2023 (almost 675,400 tests per year). The savings result from reducing the cost per PCR test to EUR 29 (CZ level) from the current cost of EUR 32 (the average cost in 2021 was EUR 37).

Savings:

PHI reimbursements (EUR million, 2021)[41]	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
88.8	-2.0	1	0	-2.0	-2.0	-2.0

Implementation steps:

- Regulation of the cost of PCR tests from July 2022.

Other cost-saving measures within the framework of PHI

Measure 21: Segregation of healthcare and social care for patients with incontinence in terms of service and disbursement

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[37] https://media.vzpstatic.cz/media/Default/dokumenty/ciselniky/vykony_01355.pdf.
[38] https://www.zakonyprolidi.cz/cs/2021-396.
[39] Payments for SETS laboratory services according to NCZI microdata.
[40] https://www.health.gov.sk/?covid-19-metodicke-usmernenia.
[41] According to the MH SR

Description: The aim of the measure is to appropriately categorise, or segregate, social care and healthcare following the example of the Czech Republic. A clearer definition of the scopes of healthcare and social care in relation to patients with incontinence will bring PHI savings. In the Czech Republic, there has also been a debate over the past few years regarding the setting of a border between healthcare and social care. However, the Czech Republic's current framework only determines that at lower stages of incontinence, the patent's co-payment is significantly higher (the participation at the first stage is 15%, at the second stage 5% and at the third stage 2%). The quantification of the measure is based on an alternative form of the Czech model where lower stages of incontinence would not be covered by PHI and compensation would be provided as a benefit from the Social Insurance Fund (in an amount determined by the PHIF).

Methodology: The estimated potential savings are calculated as the PHI reimbursement for incontinence products for 2021 for patients with prescriptions who had the diagnosis U99.01 (urinary incontinence, stage II) and never had any of the more serious diagnoses (U99.02 – urinary and stool incontinence, stage III - permanent; U99.03 – urinary and stool incontinence, stage III - permanent and irreversible). The data on incontinence product prescriptions were taken from NCZI's databases for 2021.

Savings:

PHI reimbursements (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
45.1	-7.6	3	0	-2.5	-5.1	-7.6

Implementation steps:

- Agreement with the Ministry of Labour, Social Affairs and Family of the Slovak Republic (MLSAF SR); amendments to the positive reimbursement list of incontinence products, with the saving effect achievable from 2023.

Measure 22: Medical devices: extension of international price benchmarking

Description: The price benchmarking of medical devices has been a practice in Slovakia since 2016. Until 2020, however, the prices of medical devices were only compared to the Czech Republic because of the absence of a database of foreign prices. Since December 2020, the international price benchmarking has been having the form of an official procedure[42].

Methodology: The average of the three lowest prices of a given medical device among the EU countries (according to the CNref reference identifier) is recorded as the reference price of the medical device. The manufacturer is obliged to submit a price reduction application (in the absence of such applications, proceedings for the reduction of officially determined prices are initiated). The annual savings resulting from the referencing were calculated on the basis of the consumption of medical devices over the 12-month period from the 4th quarter of 2020 to the 3rd quarter of 2021[43]. Since the comparison was extended to all EU countries, the potential for further savings is unlikely, although this will depend on the changing trends in the use of various medical devices.

Savings:

PHI reimbursements (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
158.3	-0.4	-	-0.4	-0.4	-0.4	-0.4

[42] Konanie vo veci porovnávania cien ZP 2020, Konanie vo veci porovnávania cien ZP 2021.
[43] Datasety spotreby zdravotníckych pomôcok a dietetických potravín v Slovenskej republike.

Implementation steps:

- Continue the implementation of the measure - international price referencing has been introduced since 2020 in accordance with the previous version of the spending review.

Measure 23: Optimisation of the prescription of medical devices

Description: PHI reimbursements for medical devices are increasing again. The goal is to analyse data on the prescribing of medical devices at institutions in order to identify potential over-prescribing.

Methodology: For each category of medical devices, “healthcare institution and quarter” pairs were identified for which the actual number of prescribed medical devices significantly exceeded the predictions obtained by the application of a statistical model that takes into account the array of the patients' diagnoses. When potential over-prescribing was identified for a healthcare institution - quarter pair, the relevant amount was multiplied by the average price per medical device of that healthcare institution during that quarter. The data on medical device prescriptions were taken from NCZI’s databases for 2021.

Savings:

PHI reimbursements (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
301.1	5.2	3	0	1.7	3.4	5.2

Implementation steps:

- Development of a system to identify potential over-prescribing of medical devices by healthcare institutions and subsequent inspection activity focused on the over-prescribing, with the saving effect achievable from 2023.
- Definition of outliers in the over-prescribing of medical devices.
- Application of behavioural techniques to reduce the over-prescribing of medical devices.

Measure 24: Optimisation of the staffing norms of the emergency healthcare service

Description: The operation pattern of the emergency medical assistance intended mainly for secondary transfers between hospitals (EMA-S), which was set up in 2019, was based on a too dense network and a 24-hour cycle. This despite the fact that data or experience from other countries suggested that a smaller number of points and shorter operating times would be more advisable. According to the proposed optimal model of the emergency healthcare service (EMS) control centre, EMA-S is supposed to operate between 06:00 and 18:00, which is the time when the service is effectively used. Today, they operate on a 24-hour basis under a flat-rate payment. Reducing the operating time and optimising the network of points will also save human resources, which would also have a cascading effect on the remaining EMS stations, as the number of overtime work would decrease. Overtime payments are a major component in the amount of the flat-rate monthly payment for each EMS station. However, the real effects of these steps are achievable only after the completion of the current licensing procedure, i.e. from 2026, and the savings are, therefore, considered only as potential amounts outside the current medium-term framework of 2023 to 2025.

Methodology: A cost model was prepared for each type of EMS. After verifying the assumptions and the adequacy of the current monthly payment, an additional calculation was made to figure out the lump-sum amount that would be paid if the EMA-S operated only between 06:00 and 18:00. Subsequently, the savings achievable if the number of overtimes dropped to a negligible value were calculated.

Savings:

PHI reimbursements (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
115.3	-22.6	8	0	0	0	0

Implementation steps:

- Amendment of the Ordinance governing the network and organisation of the EMS and the EMA-S (optimisation of the staffing norms of the EMA-S for operation only between 06:00 and 18:00).
- Staffing optimisation: reduction in the amount of overtime work as a cost increasing factor.

Non-PHI saving measures with an impact on the financial management of hospitals

Measure 25: Extension of the central procurement of pharmaceuticals (MH SR)

Description: In 2016, the MH SR launched the central procurement of medical equipment, which has brought significant savings on the capital expenditures of hospitals under the jurisdiction of the MH SR. In 2019 and 2020, the MH SR carried out a pilot procurement of pharmaceuticals through a dynamic purchasing portal (DNS), where average savings of 13.4% were achieved. The goal of the measure is to extend the pilot procurement to all pharmaceutical at hospitals that are not procured centrally by the PHIFs. The MH SR has prepared a portal and a mechanism for the launch of such procurement.

Methodology: The MH SR has collected data on the purchases of all hospitals falling under its jurisdiction (EUR 236.3 million for 2021). The items procured by the PHIFs centrally were put aside and for the others, the average saving amount resulting from the pilot, if the given ATC group was included in the pilot, was considered. The minimum savings of 3.6% resulting from the pilot were applied to the remaining items. Since the pilot was implemented in hospitals that have above-average days to payment, the analysis divided the generated savings into three groups, i.e. for hospitals that pay with average, below average and above average days to payment. A different variance of potential savings was applied to each group. The resulting amount of savings is EUR 32,7 million[44].

Savings:

Reimbursements to hospitals (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
236.3	-32.7	3	0	-20.0	-25.0	-32.7

Implementation steps:

- Opening of the DNS portal for all pharmaceuticals and gradual implementation of purchasing by groups.
- Performance monitoring, with the saving effect achievable from 2023.

Measure 26: SMM included in the reimbursement list: price referencing with the Czech Republic

Description: Special medical materials (SMM) are invasive medical devices that are used almost exclusively in inpatient healthcare. Hospitals are purchasing these materials individually and their reimbursement should be included in DRG payments.

Similar to the prices of pharmaceuticals and medical devices, the prices of SMM are subject to international price comparisons (referencing) at the time of entry as well as during a year. However, in contrast to other categories, there are few public databases of SMM and this often leads to imperfect comparisons and unjustified maintenance of high prices. Therefore, in 2016, a price comparison was made as a part of the first spending review, which was limited to the Czech market where the prices are more realistic compared to other available databases (e.g. Belgium), and additional savings of EUR 55 million were obtained. The primary source of savings was the XB SMM group, which includes devices primarily used in cardiac angio procedures. Despite the fact that a large portion of these savings was effectively realised (approximately 73% according to the implementation report), there are still differences between Czech and Slovak prices that cannot be explained merely by exchange rate fluctuations or volume differences. Therefore, re-referencing of the list of SMM as well as matching to real payments of Czech hospitals' invoices were made to check the justification of the pricing levels of the Slovak PHIFs.

Since SMM expenses are paid for under the DRG system, the savings will not be reflected in the PHI savings, but in the economic results of the hospitals. The effect on PHI will be seen only over some time, after the update

[44] These savings may be underestimated, as the UNLP hospital in Košice is currently finalising the DNS purchasing of pharmaceuticals and despite being one of the hospitals with the worst ability to pay, it has achieved savings at the level of the average from the MH SR's pilot.

of the DRG system, and the price reduction will also have an impact in terms of lower relative weights of the procedures concerned[45].

Methodology: The referencing of SMM was divided into two steps. Items that have a unique "x" code assigned by the MH SR were matched to the Czech list of SMM reimbursed under PHI ("VZP ZUM") and for items with large volumes, the actual invoices were retrieved, either manually or through the "State Watchdog" platform, including cash and paybacks. Based on payments for 2021, savings in the amount of EUR 9.9 million were calculated. Multicomponent items with a single MH SR code (which is a typical situation in group XC or XD) were counted separately, where the items of a sample code were divided into several lines and the individual components were referenced individually. The saving results obtained for the sample were extrapolated to the remaining items in the XC and XD groups, and savings of approximately EUR 1.1 million were calculated.

Savings:

Reimbursements to hospitals (EUR million, 2021)[46]	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
136.2	-11.0	3	0	-3.7	-7.3	-11.0

Implementation steps:

- Finalisation and consultation of the list with industry representatives, including SMM manufacturers.
- This should be followed either by publishing the list as the maximum reimbursements for *VšZP*'s list (as was the case in 2016), or by setting prices for inpatient healthcare providers in the form of a ministerial order (during 2022, with the saving effect achievable from 2023).

Measure 27: SMM included in the reimbursement list: central procurement by the MH SR

Description: The referencing of SMM is not the only a tool to get more value on reimbursed SMM. There are items that are difficult to reference, or there is already a precedent in Slovakia from a central procurement that brought the necessary quality, flexibility in the selection of devices and a better price than an external benchmark. The experience with central procurement comes from the private sphere of inpatient healthcare in Slovakia, but the principles can also be replicated in standard public procurement. The central procurement of pharmaceuticals included in the reimbursement list requires a definition of the basic functional type, but there are certain groups where this requirement can be omitted with a properly set up competition; one concrete example is joint replacements (group XC or XD) for which there is a precedent from the private sector. The aim of the measure is to replicate this procurement in the purchasing for hospitals under the MH SR's jurisdiction. SSM for which there could be overlapping with Measure 26 was excluded from the quantification.

Methodology: The average savings from central procurement by private healthcare providers were taken as a basis to calculate the savings on the same group of items in hospitals under the jurisdiction of the Ministry of Health of the Slovak Republic. The amount of payments to state hospitals for 2021 was EUR 14.9 million and the saving resulting from the application of the average discount is EUR 2.5 million.

Savings:

Reimbursements to hospitals (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
14.9	-2.5	1	0	-2.5	-2.5	-2.5

Implementation steps:

[45] I.e. these savings do not influence the PHI performance, but reduce the loss of a healthcare provider.
[46] There is a big difference between the SMM amount reported by the healthcare providers in data collection submission and that reported by NCZI (EUR 173 million). Accordingly, the savings base and the savings themselves may be many times higher.

- Definition of reference groups for XC and XD group items.
- Launch of DNS for reimbursed SMM, with the saving effect achievable from 2023.
- Monitoring of results and preparation of a basic functional type for all SMM groups.

Measure 28: SMM and medical devices not included in the reimbursement list: definition of nomenclature and negotiation of prices

Description: SSM not included in the reimbursement list does not have a clear nomenclature and several items may exist under a single ŠÚKL code. This hampers the application of price benchmarking or central procurement. This measure aims to introduce a nomenclature to achieve comparable groups of products. This will then enable better benchmarking or central procurement. While there are examples of procurements where savings ranged from 8% to 20%, there are still only few of them. At the same time, suppliers are already willing to exchange an earlier payment from hospitals under the jurisdiction of the MH SR for a 10% discount on products. Therefore, until the nomenclature is prepared, we recommend negotiating a blanket 10% discount for non-reimbursed SMM that is no longer subject to another form of MEA or central procurement. The measure would need to be supported by a value-based measure in the form of additional funds for indebted hospitals to enable them to comply with payment terms and obtain discounts for timely payments.

Methodology: A list of non-reimbursed SMM that could be subject to the negotiation procedure was prepared on the basis of the collected data regarding the consumption of non-reimbursed SMM for the year 2021 (in the amount of EUR 117.5 million). The application of a conservative estimate of 10% results in savings of EUR 11.7 million.

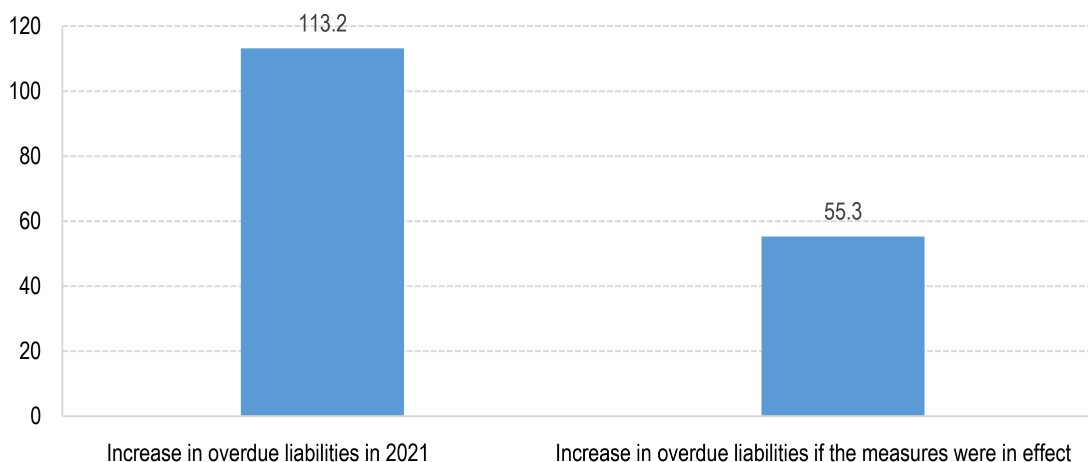
Savings:

Reimbursements to hospitals (EUR million, 2021)	Saving potential (EUR million)	Implementation horizon in years	2022	2023	2024	2025
117.5	-11.7	3	0	-2.0	-11.7	-11.7

Implementation steps:

- Preparation of the nomenclature of SMM not included in the reimbursement list.
- Conduct of negotiation procedures.
- Implementation of public procurement, with the saving effect achievable from 2023.
- Monitoring of results.

Graph 5: Comparison of the volume of payments for PCIP and savings between 2016 and 2021 (in EUR million)



Source: MH SR

3 Value-based measures in the health sector

Value-based measures linked to saving measures

Support for innovative treatment and other effects of the amendment to the Act No 363/2011 on medicinal products (related to pharmaceutical cost-saving measures): the new legislation will support the entry of innovative pharmaceuticals to the Slovak market and eliminate the differences in patients' access to therapies using innovative pharmaceuticals with a proven clinical effect (transfer of pharmaceuticals from the reimbursement exception system to the regular reimbursement system). The impact of the value-based measures of the amendment on PHI expenditures amounts to EUR 229 million in the horizon by 2025[47].

Cultivation of the DRG system to improve the efficiency and quality of inpatient healthcare (relation to the DRG measure and payments for services in inpatient healthcare): the update of the DRG-linked reimbursement mechanism is supposed to make the hospitals' financial management more efficient (including in terms of reimbursement transparency). DRG is a tool for grouping individual patient cases into homogeneous groups as regards both costs and medical aspects. At the same time, however, updating the tool according to international models will cause an increase in expenditures for hospitals that provide more expensive procedures, which are currently underfunded. The increase in resources for inpatient healthcare will subsequently enable payments to suppliers to be made within the terms of the contracts, which is one of the key conditions for reducing prices in public procurement.

Support for strengthening the GOPC network according to the GOPC Concept by 2030 document (relation to the measure aiming to reduce the number of SOPC visits and the number of avoidable hospitalisations): compared to the EU, specialist doctors are more frequently visited in Slovakia, while general practitioners are the primary contact abroad. The MH SR is preparing the GOPC Concept by 2030 material with measures to strengthen GOPC in a longer term. The measures include the extension of the scope of practice and SPDTP, transfer of some responsibilities to nurses, change of the payment mechanism for GOPC, or support for electronic healthcare and telemedicine. According to the MH SR, the increase in expenditures on GPOC is to amount to roughly EUR 70 million by 2025.

Genetics (SETS): change in reimbursements and extension of mandatory tests before procedures and the prescription of pharmaceuticals (relation to the measures aiming to reduce pharmaceutical consumption): compared to international practice, the scope of genetic tests in Slovakia is narrower, while the testing is often a prerequisite for the therapy. It is necessary to prepare a comparison of mandatory genetic tests with foreign countries, with effects including not only savings (lower expenditures thanks to the correct indication of patients for the treatment), but also increased payments for genetic tests. According to the MH SR, the increase in expenditures would amount to approximately EUR 15 million.

Support for the reduction of pharmaceutical prescription (relation to the measures aiming to reduce pharmaceutical consumption): if over-prescribing of certain pharmaceuticals is identified through the inspection activity, the PHIFs should apply back payments to motivate doctors to observe the limits when prescribing pharmaceuticals. The MH SR should employ its Behavioural Team to launch a pilot project with the aim of reducing the consumption of certain pharmaceuticals by influencing the doctor's prescribing habits in some way. As a part of this group of measures, mandatory pre-prescription CRP testing should be introduced for antibiotics.

Value-based measures to address the major challenges of healthcare

Personnel in the health sector: the Slovak health sector is facing a long-term shortage of several thousand healthcare workers, while in some professions this shortage is more pronounced than in others. In the spring of 2019, the MH SR commissioned the National Health Information Centre (NCZI) to carry out an extraordinary statistical survey concerning the numbers of personnel lacking in both inpatient and outpatient healthcare facilities of health service providers. The numbers identified through the survey were 2,659 missing doctors

[47] According to the analysis of the impact of the amendment, the effect of value-based measures on PHI expenditures is EUR 18.7 million in 2022, EUR 128.6 million in 2023, EUR 192.4 million in 2024 and EUR 228.6 million in 2025.

(1,127 in inpatient care and 1,532 in outpatient care) and 3,074 missing nurses (1,312 in inpatient care and 1,762 in outpatient care). Since 2019, however, the problem with missing staff has even worsened, which is mainly due to the impact of the COVID-19 pandemic when the healthcare personnel was exposed to even higher workload. Achieving the EU average (3.9 doctors/1000 inhabitants and 8.4 nurses/1000 inhabitants) would require over 1,200 new doctors and over 14,000 new nurses, which also points out at the lower ratio of the numbers of nurses to doctors compared to other countries. While this ratio in Slovakia is around 1.6 nurses per doctor, the OECD average is 2.7 nurses per doctor, and in several countries with high-quality results it is at the level of almost 4 nurses per doctor. It is necessary to comprehensively address the multiple causes of this under-staffing.

One of the causes (and solutions) is the financial compensation, which now reduces the attractiveness of entering the profession and makes offers from neighbouring countries even more appealing. For reasonable compensation policy benchmarking, it is primarily necessary to take into account countries with a high inflow of healthcare workers from Slovakia and, also, to compare not a nominal wage, but the multiple between the nominal wage and the average wage in the economy as an indicator of the attractiveness of the healthcare profession compared to other professions. The Czech Republic is mostly used as a benchmark in international comparisons and the wage difference is obvious, especially among mid-level healthcare workers. In order to enhance the attractiveness of medical professions and to solve the acute shortage of personnel in some healthcare facilities, it is necessary to consider implementing a more motivating financial compensation system. As a priority, the support should focus on the professions of nurses, midwives and practical nurses because of their acute shortage. In order to support the retention of more experienced staff in the profession and in Slovakia, the effect of an incentive mechanism taking into account the level of experience, which is implemented at some healthcare facilities through collective agreements and is also used in the Czech Republic, should be reviewed. Along with judges and prosecutors, doctors and nurses are the only public professions compensated on the basis of a mechanism of automatic wage adjustment based on the wage growth in the economy. According to the MH SR, the impact of increasing the salaries of the health professionals who are most lacking in the healthcare system (physicians, nurses, orderlies, practical nurses, assistants, paramedic and public health workers) to the level of the Czech Republic, in excess of the automatic adjustment mechanism, would amount to between EUR 227 and 329 million in 2022.

At the same time, it is necessary to make healthcare professions more attractive already during studies. This includes measures such as scholarships for domestic and foreign students to increase the number of students at secondary and tertiary medical schools, or start-up and recruitment allowances for new employees who stay with the employer for a certain period of time. An additional tool could be support for young workers, such as a mentoring programme (e.g. extra compensations for more experienced doctors mentoring doctors during the specialisation study). According to the MH SR, the implementation of several programmes to support students and young doctors would mean additional expenditures in the amount of EUR 10 million over the horizon by 2025. Non-financial tools such as continuous education, satisfaction surveys or support for the family and work balance (kindergartens, etc.) are also important for the stabilisation of the personnel.

Support for prevention in outpatient care: 241 people per 100,000 inhabitants die in Slovakia annually from diseases that could be prevented by better public health and prevention programmes, which is significantly more than the EU average (160 people). The public spending on prevention is below average and matching would require an additional EUR 32 million, which could reduce preventable deaths by 3% to 16% (to between 235 and 203 people per 100 thousand inhabitants), based on data from the USA.

Support for underfunded specialities/specialised outpatient care services: in addition to some over-funded services identified in the cost-saving measures, there are some services and specialities for which fewer resources are allocated compared to international levels. A new catalogue of SOPC services will be prepared with the aim of improving the financing of SOPC. The alignment with foreign countries' cost levels under the measure will have an effect on increasing PHI expenditures, but it should, at the same time, resolve the underfunding of some specialities and services. According to the MH SR, the expenditures on these measures would amount to EUR 156 million by 2025.

Mental health support: the promotion of mental health and the treatment of mental disorders was identified under the Health Spending Review II as a priority area for long-term investment in the health sector. It is necessary to modernise the system of psychiatric and psychological health and social care and strengthen the support for mental health and the prevention of disorders. In ideal conditions, the expnditures would increase annually by EUR 170-230 million[48]. Mental health support in the amount of EUR 105 million is also included in a specific component of the Recovery and Resilience Plan.

Support for long-term care (including follow-up and rehabilitation care): in the context of population ageing, it is necessary to expand the long-term care capacities which today no longer cover the needs of palliative patients and seniors. If Slovakia were to reach the average expenditures of the EU countries on social care and long-term healthcare as a share of GDP by 2030, the spending would amount to approximately EUR 1 billion with the current demographic development. If the current situation is maintained, the population ageing would cause an increase in expenditures of approximately EUR 370 million by 2030. With the existing set-up of the system, the long-term healthcare expenditures amount to 12.4% of the total expenditures on this area. According to good international practice, it is necessary to strengthen community care, assisted living care and home care in addition to palliative wards and healthcare and social care facilities. Extended long-term care saves resources for hospitals, since long-term patients are presently often placed at more expensive acute care wards, prevents re-hospitalisations thanks to sufficient follow-up treatment of patients and reduces the burden on care-giving family members. Support for long-term social care and healthcare in the amount of EUR 265 million is also included in a specific component of the Recovery and Resilience Plan.

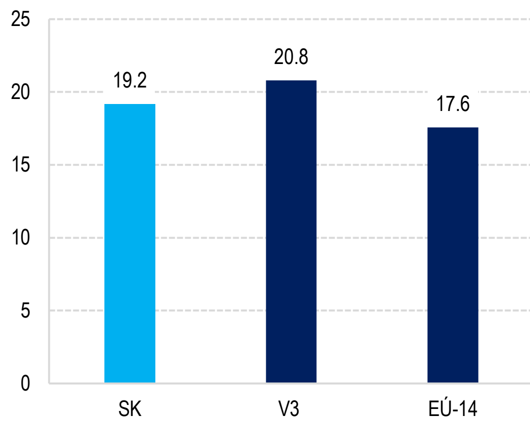
Systematic support of research, development and innovation in the health sector: research and development in the health sector in Slovakia significantly lags behind its potential, which is also reflected in the gradual decline of Slovakia's market share in clinical research. The low level of clinical research reduces the availability of the latest innovations, while reaching the level of Poland would create a room for an added economic value of over EUR 140 million per year. National projects usually attract high volumes of foreign grant schemes. According to the MH SR, following the innovation programmes of model countries as a benchmark would mean an increase in expenditures of EUR 9 million by 2025.

Measures increasing resources in the healthcare system

Introduction of fees in the health sector: direct patient payments (out-of-pocket payments or OOP) may be considered as a tool to rationalise the number of visits to outpatient clinics and an additional financial resource in the system. Slovakia is slightly above the EU average as regards the share of OOP in the total expenditures on healthcare. This share is slightly higher in the V3 countries, too. In EU/OECD countries, including Slovakia, most of households' co-payments are for pharmaceuticals and medical devices. In Slovakia, it is 65% of payments (37% in EU-14, 59% in V3). Slovakia is far behind when it comes to payments for outpatient care services. As an illustrative example, the introduction of doctor's fees in the amount of EUR 1 per visit without exceptions would to the system bring an additional EUR 58 million per year (of which EUR 34 million would be for visits to specialist doctors and EUR 24 million for visits to general practitioners). However, this would require compensating the poorer groups of the population that would be more pronouncedly affected by such fees. The costs of compensating people in material need would amount to EUR 1.3 million per year.

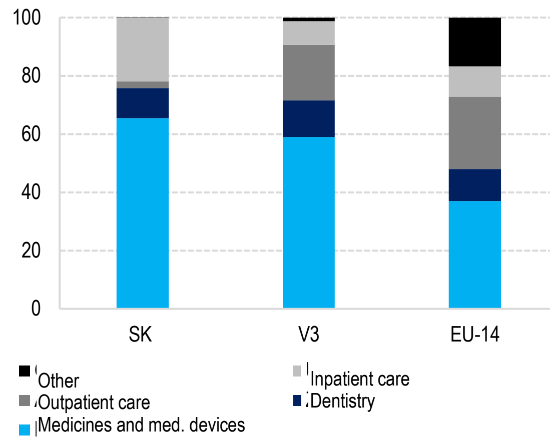
[48] VfM unit (2020): Mental health and public finances, https://www.mfsr.sk/files/archiv/9/Dusevne_zdravie_verejne_financie_UHP.pdf

Graph 6: Share of OOP in total healthcare expenditures (2019, in %)



Source: [Eurostat [tepsr_sp310]]

Graph 7: Structure of OOP by type of healthcare (2019, in %)



Note: In some EU-14 countries, outpatient services also include dentistry
Source: OECD Health at a Glance 2021