MINISTRY OF FINANCE OF THE SLOVAK REPUBLIC

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MINISTRY OF HEALTH OF THE SLOVAK REPUBLIC

iza Inštitút zdravotných analýz

Spending review on hospitals

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Executive summary

Despite rising expenditure, health outcomes in Slovakia are not improving fast enough. We lag behind both our neighbors and the rest of the EU in terms of outcomes. In addition to a lower overall average life expectancy, we have significantly fewer healthy life years and higher neonatal mortality. The Covid-19 pandemic further exacerbated this lag, partly due to the system's weaker preparedness. For example, if treatable mortality had been at the level of the Czech Republic, up to 4,096 deaths could have been avoided in 2021[1] .

Hospitals are the cornerstone of acute and life-saving healthcare. In Slovakia, their work is hampered by insufficient funding, staff shortages, poor management, persistent debt problems, and the neglect of their development due to a lack of investment. Out of a total of 90 hospitals, this review focuses primarily on 13 teaching and university hospitals[2][2] under the Ministry of Health of SR, with costs of EUR 2.2 billion in 2024, which provide nearly half of the country's inpatient care. These hospitals also have the highest concentration of long-term problems with indebtedness and budget non-compliance.

The budgets of teaching and university hospitals are not aligned with the public health insurance budget. Hospital costs have long been growing beyond budget expectations and available resources, causing repeated losses and mounting debt. In 2024, an additional EUR 261 million was allocated in the public health insurance budget to supplement hospital funding, but this did not solve the problem. Costs continue to exceed budgeted resources, and hospitals are generating new debts.

Achieving balanced financial management of hospitals and halting indebtedness is not possible without adequate payments from health insurance companies. Negotiated lump-sum payments in the past did not cover the costs of the largest hospitals, and upon contract renewal for the subsequent period, these amounts were only increased by wage growth and inflation, which did not reflect previous losses. Since 2017 alone, government expenditure on debt relief has reached EUR 1.16 billion. State hospitals, unlike private ones, negotiate with insurance companies individually, which weakens their negotiating position.

- **The current reimbursement mechanisms provide little incentive to increase production.** Hospitals are most commonly financed through lump-sum payments for expected production. When production changes, the lump sum is adjusted only minimally. Thus, a hospital's performance is not sufficiently reflected in monthly payments or year-on-year negotiations, which creates neither pressure nor motivation to increase **hospital production.**
- **A properly adjusted DRG payment system can help stop the constant accumulation of hospital debt.** Its planned launch in 2024 did not take place. The gradual phase-in of production-based hospital financing via DRG should lead to greater efficiency, increased production, and more transparency. In 2024, based on an agreement between hospitals, insurance companies, and the Ministry of Health, the first groups of procedures reimbursed via DRG—accounting for approximately 15% of inpatient healthcare—were supposed to be launched. However, the intent was not anchored in legislation, and in most cases, contracts between health insurance companies and hospitals were not amended, despite the sector-wide agreement. Therefore, the Ministry of Health secured the mandatory use of the DRG payment mechanism through legislation. Starting April 1, 2025, it will be mandatory for 15% of inpatient healthcare production—primarily deliveries, neonatal care, knee and hip replacements, and selected oncological and cardiological hospitalizations. The share of direct DRG payments will be gradually expanded up to 40% of total hospital production in 2027.
- **Opaque contracts between health insurance companies and hospitals make public scrutiny impossible.** Even though teaching and university hospitals are public institutions funded by public resources, clear information about their production and reimbursements is not publicly available. Mandatorily published contracts between hospitals and insurers, which also define payment mechanisms, are not published in a consolidated format. Only the original contract with dozens of separate amendments is available. Furthermore, hospital invoices, actual reimbursements for inpatient care, and hospital production are not published at all, making public oversight and comparability

[1] Latest available data. Before the Covid-19 pandemic, the difference compared to the Czech Republic was smaller; preventable mortality at the level of the Czech Republic could have prevented 2,176 deaths per year between 2015 and 2019.

[2] Including the J. A. Reiman Teaching Hospital in Prešov, which has been under the Ministry of Defence of the Slovak Republic since July 2024. Further details on the Slovak hospital network are provided in Appendix I.

impossible. The result is an opaque system that creates information asymmetries and disparities in procedure pricing, providing insufficient motivation to increase production and efficiency.

- **Health insurance reimbursements for the same procedures consistently vary—not only between different insurers within the same hospital, but also within a single insurer across comparable hospitals.** If, in 2023, health insurance companies had contributed to inpatient care reimbursements in the 13 teaching and university hospitals according to their actual share of care provided, the state-owned insurer VšZP would have saved EUR 27.6 million (assuming overall funding remained unchanged), while private insurers would have paid EUR 27.6 million more. Reimbursement for patients with the same level of severity differs across both insurers and hospitals; price differences for a standard hospitalization commonly amount to hundreds of euros.

The second major challenge facing Slovak hospitals is cost efficiency. Within the Ministry of Health of Slovak Republic(MoH SR) hospitals, there is room to increase efficiency by EUR 27 million to EUR 168 million annually if they were to match the efficiency of comparable hospitals. However, the total potential is likely even higher.

- **There is a lack of continuous benchmarking of hospital costs, outcomes, and production, which could significantly boost efficiency.** To achieve improvements, costs and outcomes must be evaluated and compared not only at the individual hospital level but also in greater detail at the level of specific medical programs defined by the Optimization of the Hospital Network framework (e.g., the ophthalmology program, thoracic surgery program, etc.). The necessary data for this already exists; however, it is not centrally collected or systematically evaluated.
- **Personnel costs, which account for 56% of hospital expenses, have long been growing faster than budgeted.** The budgeted wage growth in healthcare between 2015 and 2023 was 89%, whereas the personnel costs of Ministry of Health SR hospitals increased by 130% during the same period. This mismatch between budgeted and actual personnel cost growth contributes to hospital indebtedness.
- **The number of doctors and administrative staff has grown, even though the number of nurses has fallen and the number of hospitalizations have declined slightly.** It is questionable whether all hospitals can make effective use of these capacities, as their performance is limited mainly by a shortage of nurses. There are differences of tens of percent between teaching and university hospitals in the volume of standardised services per employee.
- **Hospitals could free up between EUR 17.5 million and EUR 54.5 million annually for other priorities through more efficient procurement of pharmaceuticals, specialized medical materials (ŠZM), and medical equipment.** Currently, hospitals execute most of their procurement individually and make little use of tools such as whitelists[3] . However there already is experience of centralized procurement of CT scanners is 2016 which has generated saving of of 30% to 40%.
- **Contracts with external providers of ancillary diagnostic services are not always advantageous for hospitals.** To provide CT, MRI, and ultrasound (USG) examinations or laboratory diagnostics, some hospitals lease their premises to private companies, often at low rental rates that fail to reflect the high profitability of these services.

Hospitals under the Ministry of Health lack governance from the ministry. Hospitals do not have clearly defined managerial goals, nor are there clear rules for how their directors are selected, evaluated, and dismissed. Low transparency in hospital governance contributes to high leadership turnover. On average, the director of a teaching or university hospital remains in office for only two years, which further exacerbates existing problems.

A transparent investment strategy is needed for the gradual renovation and development of hospitals. The total investment backlog across all Ministry of Health hospitals amounts to between EUR 4.5 billion and EUR 7.1 billion. The average age of hospital buildings frequently exceeds 50 years, and most of them do not meet today's standards, which jeopardises the health of patients. Since layout deficiencies cannot be solved by renovating existing buildings alone, the construction of new ones is unavoidable. However, the Ministry of Health must systematically manage the project planning phase of these new constructions and make better use of existing resources. A key tool for this is an investment plan for the preparation and implementation of projects over a period of at least five years.

[3] Lists of goods and services that should be used preferentially within an organisation.

Recommended measures:

1. **Stop hospital indebtedness by improving budgeting**
   1.1. Include expected and justified hospital expenditures in the budget requirements of public health insurance.
   1.2. Adjust financial plans after approval of the public administration budget so that they correspond to its capabilities.
   1.3. Increase the expenditures of state hospitals beyond the scope of their business and financial plans only after consultation with, and approval by, the Ministry of Health.
2. **Increase cost efficiency**
   2.1. Benchmark hospitals against one another and continuously evaluate the causes of disparities down to the level of medical programs, particularly regarding differences in the efficiency of personnel costs.
   2.2. In view of the Agreement on the Establishment of Social Peace in Healthcare between the Government of the Slovak Republic and the Medical Trade Union Association (LOZ), revising the automatic wage indexation and seniority-based pay is not currently on the government's agenda. However, from the long-term perspective of public finance sustainability, it would be appropriate to at least partially replace seniority-based pay with more flexible remuneration based on the fulfillment of doctors' KPIs.
   2.3. Increase hospital revenues from external operators of ancillary diagnostic services through higher rents.
   2.4. Introduce centralized procurement of pharmaceuticals, specialized medical materials (ŠZM), and equipment and create "whitelists" and a uniform methodology for reporting costs and consumption.
3. **Actively manage hospitals and ensure transparent financing**
   3.1. Introduce management targets, particularly for compliance with approved financial plans, publish them in standardized annual reports, and publicly report on their fulfillment through centralized hospital governance.
   3.2. Centrally manage negotiations between hospitals and health insurance companies, similar to how private hospital networks operate.
   3.3. Continuously review contractual relationships between hospitals and health insurance companies.
   3.4. Select hospital directors through transparent selection procedures and dismiss them based on their (non)fulfilment of defined objectives.
   3.5. Introduce a legislatively defined, uniform payment mechanism between hospitals and health insurance companies and, in case of contract amendments, make the publication of a consolidated version mandatory. In this regard, the National Council of the Slovak Republic (NR SR) already adopted legislative changes in February 2025 by amending Act No. 581/2004[4] .
   3.6. Publish hospital invoices issued to health insurance companies in a clear structure. The Ministry of Health has initiated a legislative change in this regard as well. As of January 1, 2025, inpatient healthcare providers are obligated to publish an annual report[5].
   3.7. Introduce and publish standardised annual reports.
4. **Ensure sufficient qualified and adequately motivated staff.**
   4.1. Put higher competences of nurses (e.g. midwives) into practice, make the profession more attractive by significantly reducing the administrative burden and transferring less demanding activities to practical nurses.
   4.2. Monitor doctors' secondary employment, publish basic information on its development in standardized annual reports, and introduce the position of a "university doctor" who simultaneously acts as a hospital physician and a university academic.
   4.3. Simplify the employment of healthcare professionals, especially nurses, from third countries, primarily by accelerating the recognition of their qualifications and reducing the associated recognition fees.
5. **Plan hospital renovations and build**
   5.1. Prepare and adhere to a single investment plan that defines the ministry's priority projects, and stop creating separate plans for different funding sources, which currently makes it unclear what the ministry's true priorities are.

[4] Section 15(1)(ao) defines the extended obligation to inform the MoH SR and the Health Insurance Agency of the Slovak Republic about reimbursements and their structure.

[5] According to Act 578/2004 Coll., § 79, paragraph 1, letter bw).

5.2. Improve the drawdown of funds from the state budget or EU funds by supporting high-quality project preparation and implementing a strategy to reduce investment backlog.

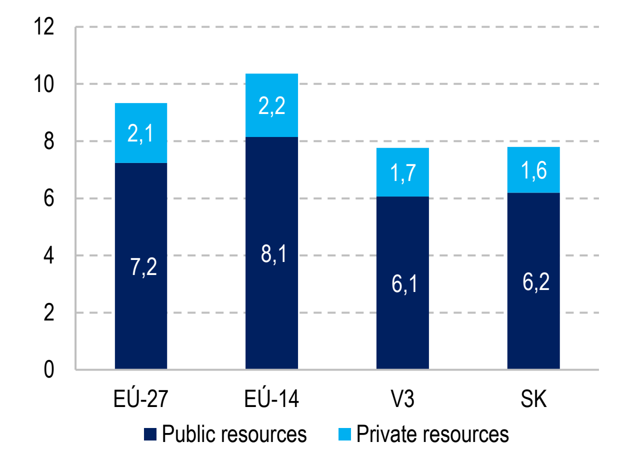
1 Value for money in Slovak hospitals is insufficient

Despite growing healthcare spending, outcomes are improving slowly, and we lag behind, especially in terms of treatable mortality. Hospitalizations in Slovakia are more frequent, hospital stays are longer, and bed utilization is below average. More than a third of all healthcare resources go to hospitals, which have long operated with costs exceeding their revenues, resulting in accumulating debt despite regular supplementary funding from the MoH. The government is not taking a systematic approach to debt relief, and therefore faces fines from the European Commission.

1.1 Slovak healthcare still lags behind in results

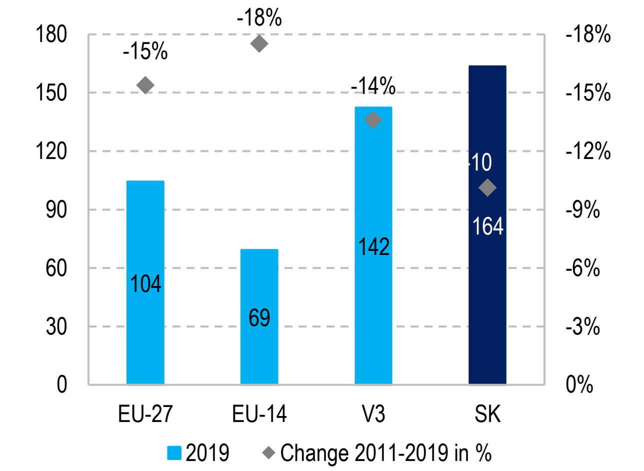
Healthcare spending is related to country's wealth and demographic structure. Richer countries with older populations spend more money not only from public but also private sources (VfM, 2023). Total Slovak healthcare expenditure in 2021 accounted for 7.8% of GDP (of which 20% was private), matching the V3 countries' average (7.8%). The EU-14 countries spend the largest share of GDP, averaging 10.3%.

Figure 1: Healthcare expenditure, broken down by private and public (% of GDP), 2021



Source: OECD, IZA

Figure 2: Treatable mortality (per 100,000 inhabitants)

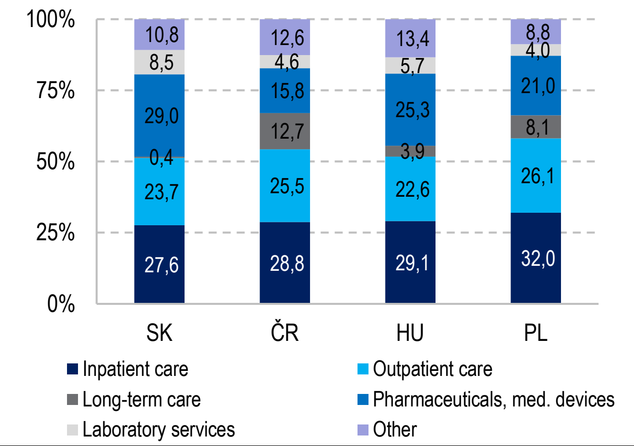


Source: OECD, IZA

Although the performance of the Slovak healthcare system was improving before the pandemic, we are only slowly catching up with the EU and V3 countries. Outcomes are particularly poor regarding the number of deaths preventable by the healthcare system (treatable mortality). Slower improvement compared to the average of the V3, EU-14, and EU-27 countries means that these disparities are widening over time. The wealthiest countries (EU-14) achieved the best results and the fastest decline during the monitored period. The pandemic further highlighted Slovakia's lag. In 2021, treatable mortality rose to 206 persons per 100,000 inhabitants under the age of 75, compared to 164 in Figure 2.

The share of expenditure directed to hospitals in Slovakia is lower compared to the average of other countries, even though we have more acute care beds (Figures 3 and 4)**.** Inpatient healthcare costs account for almost a third of total healthcare expenditure. Slovakia spends slightly less on this (2.1% of GDP in 2021) than the EU-27 average (2.5% of GDP in 2021) and even the V3 average (2.3% of GDP in 2021), with public sources accounting for the majority. The growing trend in inpatient healthcare expenditure is evident across all countries.

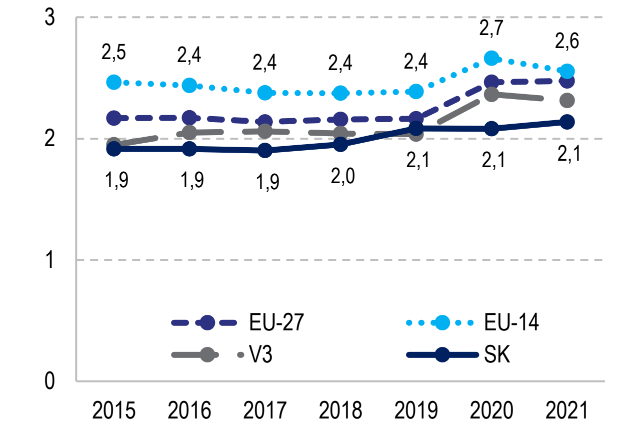
Figure 3: Structure of healthcare expenditure in V4 countries in 2021 (in %)



Note: Slovak expenditure on hospital care is slightly underestimated because part of the expenditure on ŠZM consumed in hospitals is incorrectly reported under pharmaceuticals and medical devices. The share of expenditure on hospitals is greater than that on primary healthcare because other groups of expenditure (e.g. outpatient services) are also included in this category.

Source: OECD, IZA

Figure 4: Trend in the share of inpatient care expenditure (% of GDP)

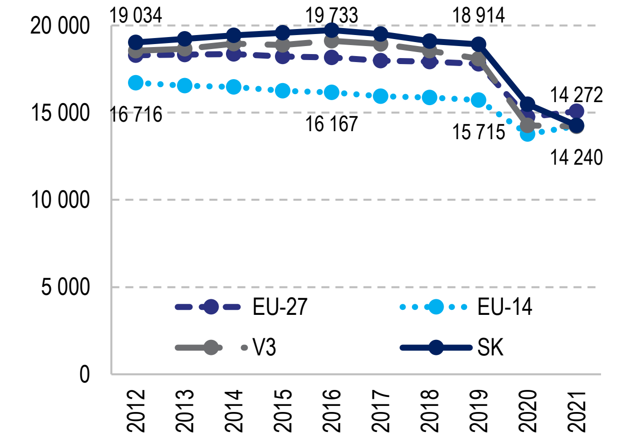


Source: OECD, IZA

1.2 Hospitals have many patients with long hospital stays and a shortage of follow-up care beds

Slovakia exceeds the average number of hospital discharges in other countries. The low occupancy rate indicates a disproportionately large bed capacity. In EU countries, there has been a gradual decline in the number of hospital discharges. This trend is also reflected in the development of the number of beds. In Slovakia and the V3 countries, the decline in hospitalizations only became apparent in 2016. During the pandemic, planned healthcare was significantly reduced across the EU. The number of acute care beds is declining only slowly. Their occupancy rate is below the EU average. The difference compared to the EU-14 was more than 10 percentage points for 2019. The occupancy rate of Slovak hospitals has been low for a long time.

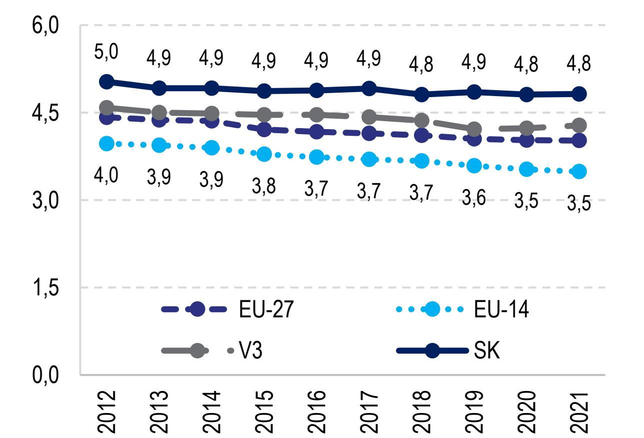
Figure 5: Total number of hospital discharges (per 100,000 inhabitants)



Note: EU-14: excluding Greece and the Netherlands; EU-27: excluding Cyprus, Greece, Malta and the Netherlands.

Source: OECD, IZA

Figure 6: Number of acute beds (per 1,000 inhabitants)

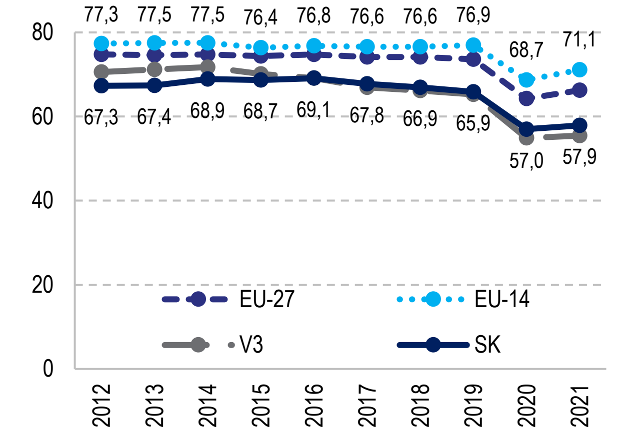


Note: EU-14: excluding Denmark and France. Greece and the Netherlands since 2015, Luxembourg since 2013; EU-27: excluding Cyprus, Denmark, Estonia, Latvia, Malta, Slovenia and France. Greece and the Netherlands since 2015, Luxembourg since 2013.

Source: OECD, IZA

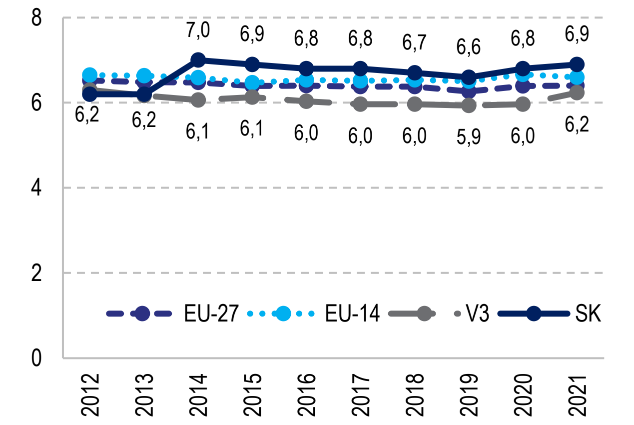
Countries with the best outcomes achieve high bed occupancy rates. It is neither possible nor desirable to achieve full occupancy of acute wards. According to the OECD recommendation, an occupancy rate of 85% in acute wards is still safe. It does not pose a risk to patients or the functioning of the hospital (NICE, 2018). Very high occupancy rates (e.g., 98%) can put patients at risk. Conversely, low rates (40%) indicate inefficient use of a healthcare facility's material and human resources (Lechintan, 2017) or a shortage thereof.

Figure 7: Bed occupancy rate, acute wards (in %)



Note: V3: excluding Poland EU-14: excluding Finland and Greece. The Netherlands since 2015; EU-27: excluding Bulgaria, Cyprus, Estonia, Finland, Greece, Malta, Poland, Romania, and the Netherlands since 2015.
Source: OECD, IZA

Figure 8: Average length of hospital stay, acute wards



Note: EU-14: excluding Denmark, Greece. The Netherlands since 2015; EU-27: excluding Cyprus, Denmark, Greece, Malta. The Netherlands since 2015. Bulgaria since 2019; Since 2014, hospitalizations from acute psychiatric wards have also been included in Slovak data on the average length of hospitalization.
Source: OECD, IZA

If the average length of hospital stay matched that of other countries, the occupancy rate of acute wards would be even lower. Low occupancy rates in acute wards in Slovakia are achieved despite longer hospital stays compared to other groups of countries. The shortest hospital stays were in the V3 countries (6 days). The EU-14 had half a day more. The positive trend of shorter hospital stays in Slovakia was interrupted by the pandemic. The ideal scenario is to have fewer beds with sufficient nursing staff and to avoid excessive occupancy (Sharma et al. 2022).[6] However, a significant reduction in the length of hospital stays is hampered by a lack of post-acute care capacity.

The problem of excess acute bed capacity is accompanied by a shortage of rehabilitation beds (Box 1) and inadequate post-acute care. In the near future, Slovakia should focus on restructuring its bed capacity. It should make the use of acute beds more efficient and gradually further shorten hospital stays in acute wards. Given demographic trends, it will be necessary to transform part of the acute care capacity into post-acute care. This includes rehabilitation and long-term care facilities.

In addition to a shortage of staff, the low occupancy rate of Slovak hospitals is also caused by the excessive density of the hospital network. This density further increases staffing requirements. Hospitals primarily lack nurses. This shortage is felt not only in wards and at bedsides but also in operating theaters (especially specialist surgical nurses, known as scrub nurses). The hospital network is fragmented. Wards with insufficient demand are gradually being closed. An example of this is the closure of several maternity wards over the last 15 years. Conversely, some departments remain open despite low occupancy rates. This happens even when the identical department exists in a neighboring hospital only a few dozen kilometers away. The ongoing reform of the hospital network, known as HNO (see Appendix I for details), aims to optimize this infrastructure.

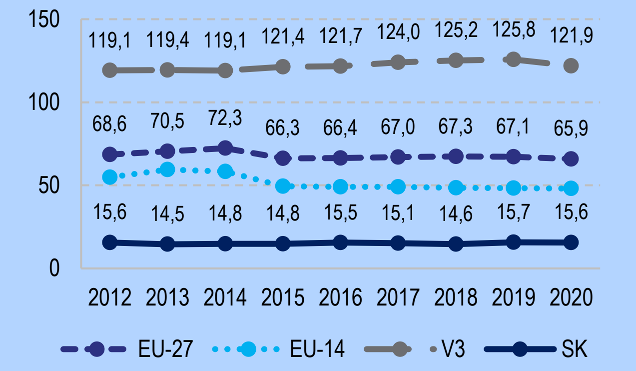
Box 1: Follow-up care within the inpatient care

Slovakia is at the bottom in the number of rehabilitation beds compared to the average of other EU countries. No significant changes have been observed regarding rehabilitation beds over the past 9 years. The trend for post-acute healthcare (specifically long-term care beds) is declining across the EU. This decline is primarily related to the shift of long-term care beds from inpatient healthcare facilities to home care settings or community-based senior care facilities.

[6] Successful countries are managing to reduce the length of hospitalization while maintaining or improving the quality of care (for more details, see e.g. Golinelli et al., 2024 or OECD, 2013). This is made possible by new methods and technologies used in healthcare and improvements in post-acute and primary care. Reimbursement mechanisms that do not encourage longer hospital stays may also have some impact. It is also important to support hospitals in improving the coordination of care across the patient's diagnostic and treatment pathways. Shortening the length of hospitalization is crucial not only for public finances but also for patient health. Longer hospital stays can worsen care outcomes. Hospitals are potentially risky places where, under certain circumstances, patients may be at risk of, for example, nosocomial infections or procedural and communication failures (e.g. incorrect administration of medication).

Establishing this type of bed capacity should be a high priority for Slovakia. This is especially critical due to the aging population.

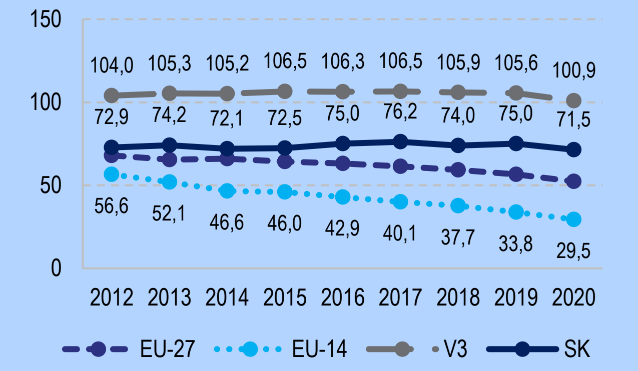
Figure 9: Number of rehabilitation care beds (per 100,000 inhabitants)



Note: EU-14: excluding Denmark, France and Sweden. Greece and the Netherlands since 2015; EU-27: excluding Cyprus, Denmark, Estonia, France, Latvia, Slovenia and Sweden. Greece and the Netherlands since 2015

Source: OECD, IZA

Figure 10: Number of long-term care beds (per 100,000 inhabitants)



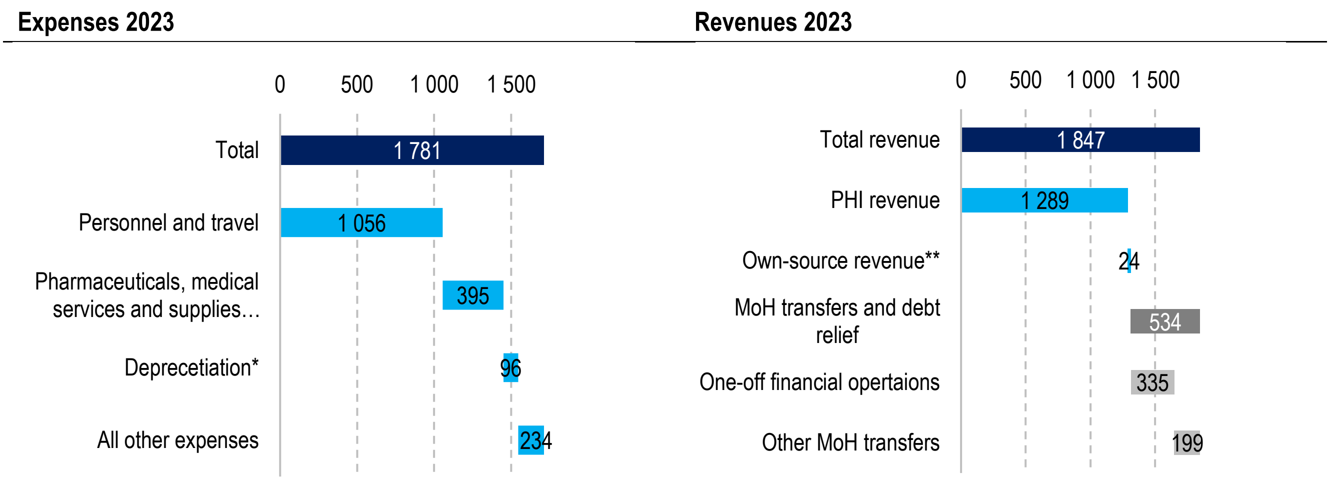
Note: EU-14: excluding Denmark, France, Germany, Portugal and Sweden. Greece and the Netherlands since 2015, Luxembourg since 2019; EU-27: excluding Cyprus, Denmark, Estonia, France, Germany, Latvia, Luxembourg, Portugal, Slovenia, Sweden. Greece and the Netherlands since 2015, Luxembourg since 2019

Source: OECD, IZA

1.3 Hospitals are operating at a long-term loss and generating debt despite rising revenues

The revenues of Slovak hospitals from public health insurance (PHI) have long failed to cover their costs. They are therefore regularly subsidized and relieved of debt outside the PHI system. In 2023, teaching and university hospitals under the MoH would have been EUR 468 million[7] short without all government transfers and additional funding (EUR 534 million). They were provided with EUR 335 million in one-off funds. Without these funds, their total loss would have reached EUR 269 million (MoH SR, 2023).

Figure 11: PHI revenues of teaching and university hospitals covered only 72% of their costs in 2023



** Depreciation, reserves and provisions from operating and financial activities*
*** Revenues from business activities and sales from public pharmacies reduced by their costs, which are not included in the costs (left graph).*

Source: NCZI, VfM

Personnel costs, which constitute the largest part of hospital costs, are key in terms of their management. They exceed the second largest category, pharmaceuticals, medical services and materials, by more than 2.5 times. Their growth has long outpaced budgeted increases (see section 2.1 for more details), contributing to the indebtedness of hospitals.

[7] The difference between hospital costs and the sum of their revenues from the Health Insurance Company and their own activities in Figure 11, specifically the distribution of revenues of the 13 largest hospitals of the MoH SR, is shown in Annex II.

The long-term imbalance between hospitals' total revenues and costs has resulted in their indebtedness. The overdue debt of Slovak public hospitals at the end of 2023 exceeded EUR 800 million and continues to grow. The largest part of the debt is attributable to semi-budgetary organizations under the MoH SR (90%). This debt is part of the consolidated public debt according to the ESA 2010 methodology.

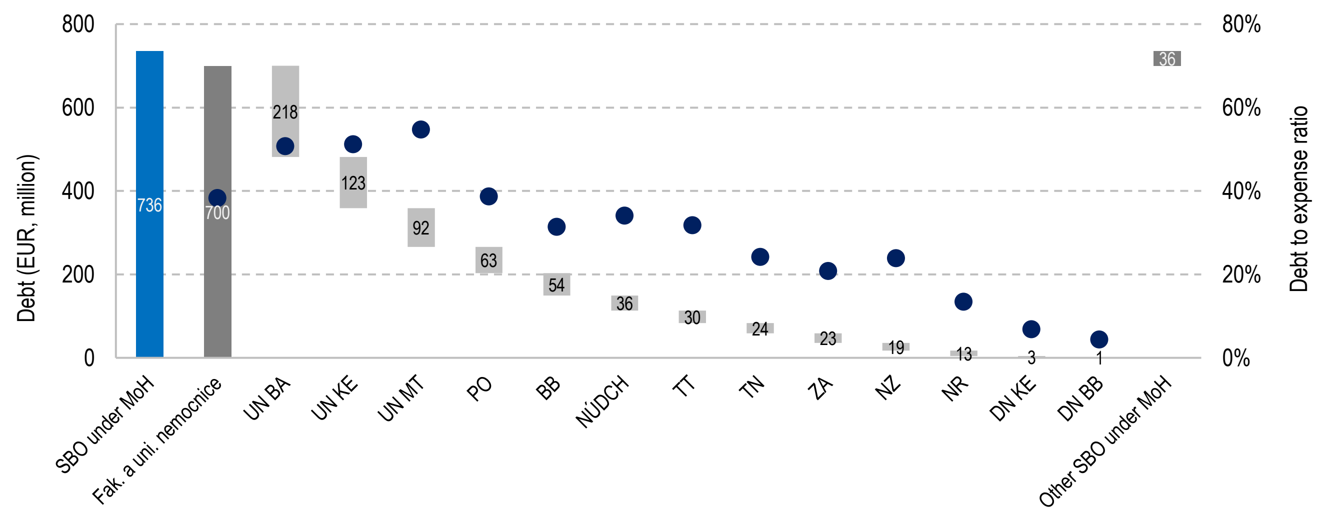
Table 1: Status of overdue liabilities as at 31 December of the given year, in EUR million

Type of facility	2019	2020	2021	2022	2023
Semi-budgetary organisations under the jurisdiction of the MoH SR	541,8	605,5	718,7	723,0	735,6
Facilities under the jurisdiction of the MoI and the MoD	17,8	21,4	30,7	32	29,7
Facilities delimited to municipalities and higher territorial units	40,1	39,3	51,8	56,8	51,2
Facilities transformed into joint stock companies	0	0	0	0	0
Health insurance companies	0,0	0,4	0,4	0,6	0,6
Total	**599,7**	**666,6**	**801,6**	**812,4**	**817**

Source: MoH SR, Information on debt development in the healthcare sector for 2023, VfM

Up to 86% of the total debt was generated by 13 teaching and university hospitals. Larger hospitals generate larger debts not only in absolute terms, but also in relation to their total costs or production. University Hospital Bratislava (UN BA) currently has the largest absolute debt (EUR 218 million), while University Hospital Martin (UN MT) has the largest debt in relation to its costs (55% of total costs). Half of the debt of hospitals under the jurisdiction of the MoH is owed to the Social Insurance Agency, a quarter is owed to suppliers of pharmaceuticals and medical supplies, and 19% is owed to non-bank institutions[8] (MoH SR, 2023).

Figure 12: Debt of MoH SR semi-budgetary organisations as at 31 Dec 2023



Source: MoH SR, Information on debt development in the healthcare sector for 2023, VfM

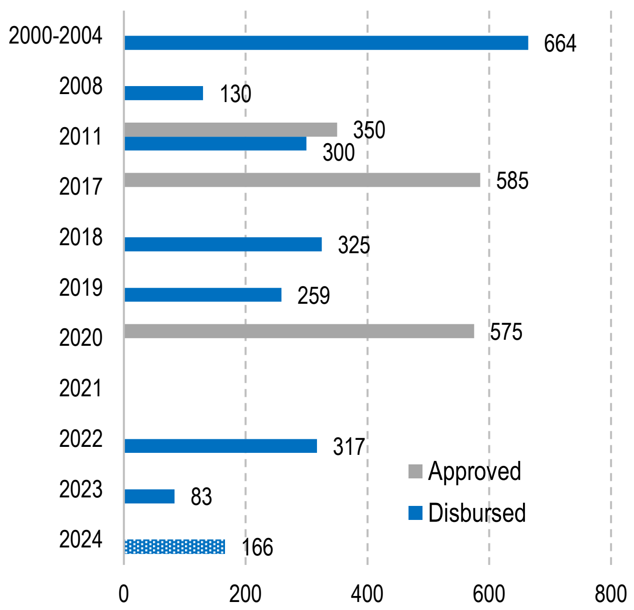
Unpaid liabilities cost at least EUR 20 million per year in interest to private creditors. Unpaid liabilities to private creditors bear interest at an average rate of 9% per annum, which is significantly more expensive than the financing that the state could provide. In addition, the European Commission is already suing Slovakia because state hospitals are not complying with the European directive on combating late payments. The state faces a fine of EUR 800,000 and a penalty of EUR 50,000 for each day until the shortcomings are remedied.

Hospitals are regularly debt-relieved, with a total of EUR 2.4 billion in five rounds since 2000. However, systemic changes that would prevent further debt accumulation have not been adopted (NKÚ, 2024). This approach creates moral hazard. Hospital management is not responsible for indebtedness and may not have sufficient motivation to behave in

[8] Non-bank institutions are financial institutions that do not have a banking licence. These include, for example, companies that purchase overdue receivables (factoring), companies providing consumer loans or leasing companies, etc.

a fiscally responsible manner, whether in negotiating revenues from insurance companies or in controlling their costs. Debt relief is unsystematic and does not address the causes of hospital indebtedness, a fact the European Commission has also pointed out. Debt relief to date has mainly concerned liabilities to the Social Insurance Agency. The claims of private suppliers have largely remained unpaid and are therefore continuing to grow through penalties and interest on arrears.

Figure 13: Hospital debt relief



Main steps in hospital debt relief:
1. **2000-2004** (EUR 664 million) liabilities transferred to Veriteľ, a.s.
2. **2008 -** (EUR 130.2 million) Funds originally intended for repayment within 15 years; debt was subsequently forgiven.
3. **2011 -** (EUR 350 million) Slovak Government Resolution No. 548/2011 Z.z. (17 August 2011), EUR 300 million disbursed
4. **2017 -** (EUR 585 million) Slovak Government Resolution No. 425/2017 (13 September 2017) for hospitals EUR 557 million and Slovak Government Resolution No. 937/2017 for NTS EUR 28 million
5. **2018-2019** total disbursement of EUR 325 million(EUR 28 million for NTS)
6. **2020** - Financial stabilization proposal for healthcare(EUR 575 million)
7. **2021** - Memorandum of cooperation between the Ministry of Health and the Ministry of Finance (21 January 2021) and 30 March 2022 specified tasks and defined cost-cutting measures for hospitals
8. **2022** - EUR 317 million of the EUR 575 million was used. Proposal for subsequent financial stabilisation of healthcare approved by the government (1 December 2022) to use the remaining €258 million under new conditions.
9. **2023 -** EUR 83.4 million released from EUR 258 million and request for release of a further EUR 174.8 million in December.
10. **2024 -** expected release of at least EUR 166 million.

Source: VfM

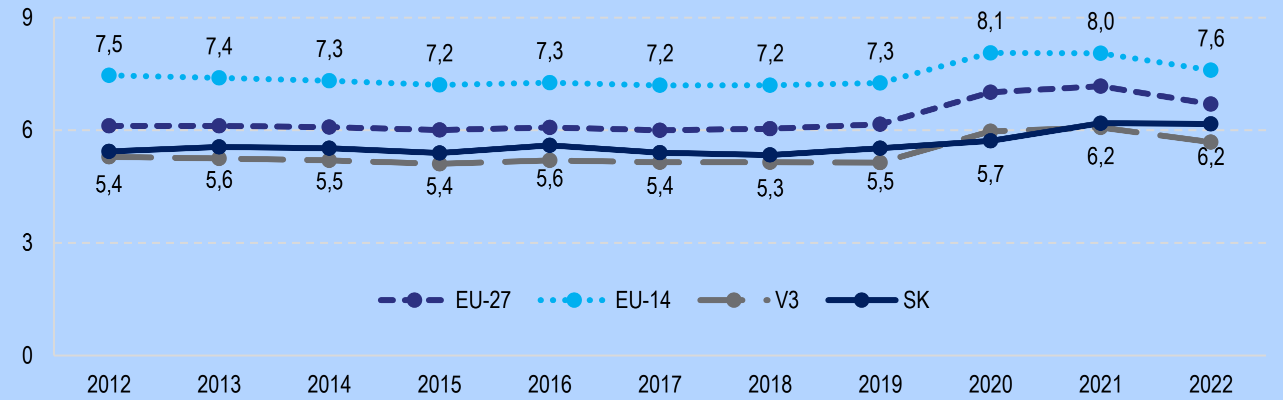
Box 2: Impact of the Covid-19 pandemic on hospitals

Due to the Covid-19 pandemic, Slovakia faced new challenges in healthcare that required flexible and rapid responses. The pandemic significantly affected expenditures in 2020 and 2021. This was primarily driven by the increased need for Covid-19 treatment and protection. The budget had to adapt to the rapid procurement of medical equipment and diagnostic tools, as well as to ensure adequate care for infected patients.

Although healthcare spending rose significantly in other countries as early as 2020, in Slovakia it did so a year later. With the arrival of the pandemic in 2020, public spending in Slovakia increased by only 0.2 percentage points of GDP, in the Czech Republic by 1.6 percentage points, and in the EU-27 and EU-14 countries by 0.8 percentage points. Slovakia caught up with the other V4 countries only in 2021. As the pandemic situation improved, healthcare spending declined slightly across the EU.

In contrast to expenditure, hospital production declined because the pandemic severely restricted healthcare, with a large proportion of planned hospitalizations and procedures being postponed. The number of hospitalizations fell by 18% between 2019 and 2020, which is comparable to the EU-27 countries (a 17% decline). The decline was more pronounced in the V3 countries (21%). In contrast, in developed countries (EU-14), the number of hospitalizations fell only by 12%.

Figure 14: Public expenditure on healthcare (% of GDP)



Source: Eurostat, IZA

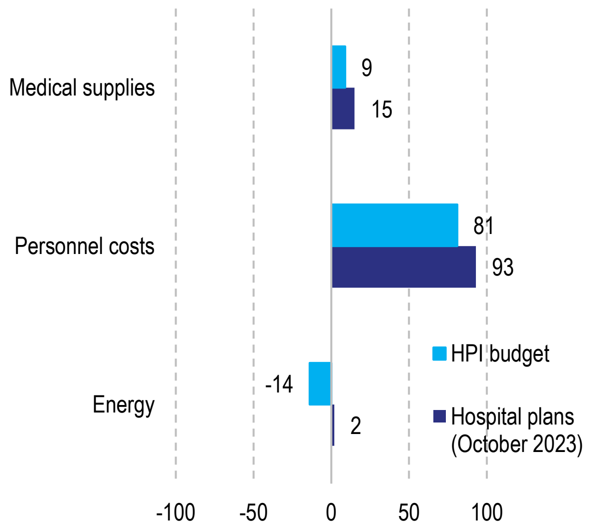
2 Hospitals are unable to negotiate sufficient funds from public health insurance

Hospitals' financial plans show that their funding is never sufficient, and almost every state-owned hospital plans losses of tens of millions of euros each year. The MoH must begin to manage its hospitals more actively and ensure their funding in line with the capabilities of the public finance budget. Greater transparency in hospital management and reimbursement mechanisms will improve cost efficiency as well as the negotiation process with health insurance companies. Above all, it will help to stop the constant debt accumulation.

2.1 Hospital budgets must be aligned with the public health insurance budget

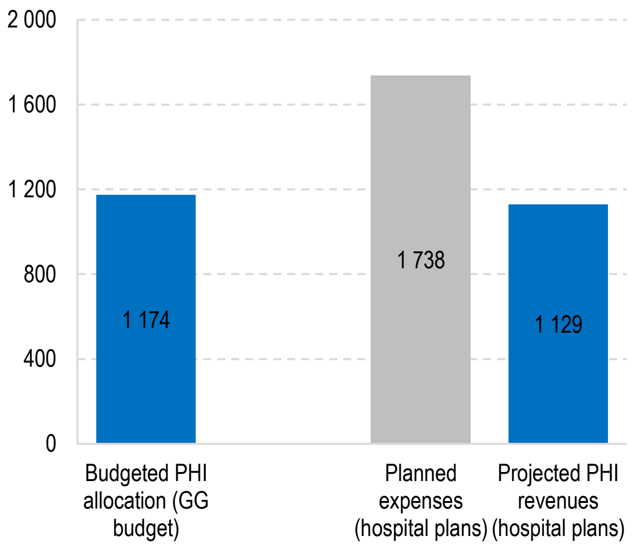
The financial plans of teaching and university hospitals under the MoH are not taken into account during the preparation of the PHI budget. The ministry merely passively collects the budgets prepared by the hospitals. For example, when preparing the budget for 2024, hospital budgets included a 9.3% increase in personnel costs. Meanwhile, the PHI budget allocated only a 7.7% increase in accordance with the automatic wage indexation[9]. There was also a significant discrepancy regarding the expenditure on energy and medical supplies.

Figure 15: Discrepancy between the GG budget and the financial plans of 13 MoH SR hospitals in selected cost items (planned changes in 2024 compared to 2023)



Source: MoH SR, VfM

Figure 16: Teaching and university hospitals planned a loss in 2023 even before the finalisation of the GG budget, EUR million



Source: MoH SR, VfM

The expected costs and revenues of hospitals do not correspond to the expected costs and revenues of the PHI for the given segment of care. The planned costs of 13 teaching and university hospitals exceeded expected PHI funding by EUR 609 million. After taking other revenues into account, the expected loss in their financial plans stood at EUR 335 million.The hospitals and the MoH, as their governing authority, therefore expected that the difference between PHI revenues and actual costs would not be fully covered even by other sources, such as transfers from the MoH.

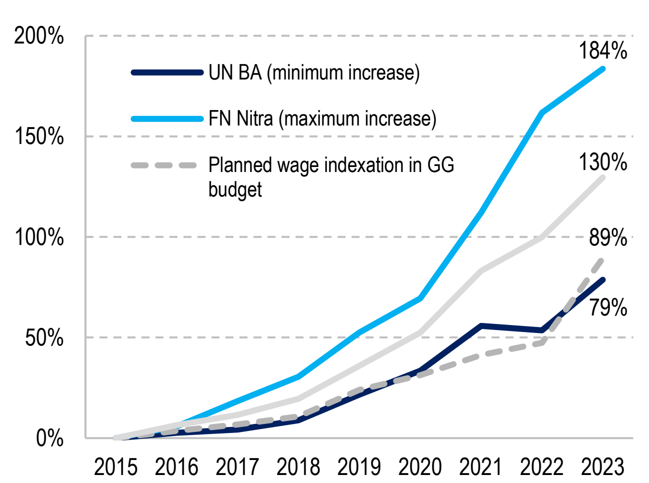
Personnel costs account for 56% of total hospital costs and have long been growing significantly faster than how much was budgeted. While their budgeted cumulative increase between 2015 and 2023 was 89%, the 13 teaching and university hospitals saw an average increase of 130%. Several large private hospitals also recorded similar increases.[10] When

[9] Act 578/2004 defines the minimum wages for individual categories of healthcare workers in institutional care as a multiple of the average wage two years ago, which ensures their growth in line with the growth of the average wage in the economy (with a two-year lag). The PHI budget annually anticipates growth in all personnel costs in institutional and outpatient care in line with the average wage.

[10] For example NsP Michalovce by 182%, Agel Zvolen by 168%, Penta Hospitals Spišská Nová Ves by 126%, Agel Kočice-Šaca by 118%, Penta Hospitals Galanta by 111%, Penta Hospitals Dunajská Streda by 90%.

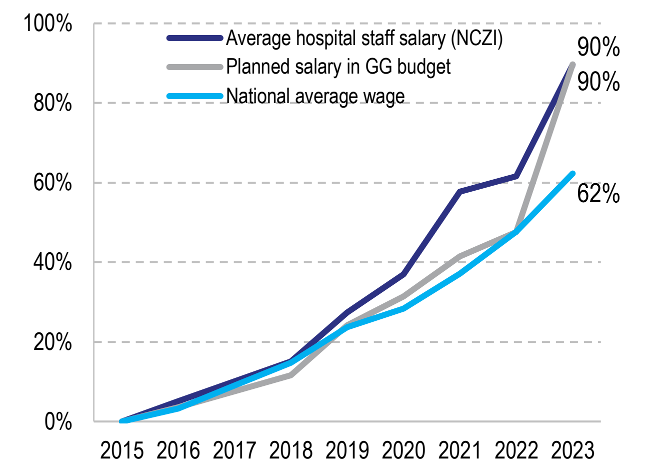
compiling the budgets for 2015 to 2023, no increase in the number of hospital employees was anticipated, but in reality, the headcount did increase (Box 3).

Figure 17: Growth of personnel costs in hospitals of the MoH SR (min, max, average)



Source: Hospital financial statements, VfM

Figure 18: Average growth of employee wages in hospitals of the MoH SR



Note: FTE in 2017 is the average of 2016 and 2018; the average wage of a hospital employee for 2023 is the average of Q1-Q3

Source: NCZI, VfM

A significant portion of wage costs (up to around 30%) consists of terms negotiated collectively and individually beyond the scope of legislation. In addition to direct wage costs, collective agreements also provide for other non-financial benefits in the form of, for example, extra days of holiday. Additional leave creates the need to employ around 600 FTE[11] additional healthcare workers to achieve an equivalent workforce without such a benefit, at a cost of around EUR 20 million in 2022. More generous conditions without linking them to the budget further widen the gap between hospitals' financial plans and the budget.

Hospitals are unable to control their costs or negotiate with health insurance companies in a way that would cover their expenses with sufficient revenues. Hospital management changes frequently (see section 4.2 for more details), leaving directors without the necessary experience to negotiate effectively with insurers. The MoH has declared that, from 2024 onwards, it will address inadequate budget planning and the management of procurement and operating costs through monthly monitoring of 13 teaching and university hospitals. This will be accompanied by in-depth audits of salaries, collective agreements, and staffing standards (as outlined in the special explanatory memorandum to Decree No. 55/2024 Coll).

The MoH should be informed about the planned costs (and expenditures) of hospitals before the budget is drawn up. When drawing up the budget, the MoH negotiates the main needs of the sector, automatically taking into account the natural increase in prices or the growth in salaries of healthcare personnel in line with the average wage. The reviewed hospital expenditure plans will serve as a basis for the MoH SR in negotiations on the public health insurance budget. The approved budget will subsequently be used to update hospital financial plans, which will determine the budgeted expenditure for individual hospitals and, consequently, the necessary revenues they must negotiate with health insurance companies.

The MoH must begin to actively communicate budgeted resources to individual healthcare facilities. Updating financial plans, alongside the valid Programme decree on minimum funding amounts, serves as a regulatory tool for the Ministry, ensuring that allocated funds will be more predictable for both inpatient care as a whole and for individual state hospitals. Therefore, based on the approved business and financial plans, there should be no arbitrary increases in expenditure during the year without prior consultation with the MoH, thereby preventing the circumvention of established budget limits and financial commitments. Hospitals should always consult the MoH regarding the need to exceed a limit, and the MoH retains the ultimate authority to approve or deny it.

[11] FTE - full-time equivalent, is equivalent to full-time employment, i.e. it calculates employment not by the number of people but by the size of the positions.

Box 3: Personnel costs are outpacing budget allocations

The significant increase in personnel costs is driven by growth in both employment and hospital staff wages. Between 2015 and 2022, the number of employees in teaching and university hospitals increased by 15%. The largest increases were seen among healthcare assistants (36%) and non-medical staff (33%). During the same period, the average wage in hospitals increased by 62% to EUR 1,922. This increase outpaces the cumulative budgeted growth or wage increases in the wider economy by 14 percentage points (p.p.). Wage increases above the budgeted level are also caused by collective and individual agreements concluded between hospital management and employees, which often do not respect budgetary constraints. Until recently, the MoH had absolutely no overview of these agreements or the financial obligations arising from them. The first data collection only took place in the second half of 2024, and the results have not yet been published.

Doctors and nurses account for more than 65% of hospitals' total personnel costs. The remainder consists of other healthcare staff and administrative workers. Therefore, any changes in the number of doctors and nurses, or their remuneration, have a massive impact on total costs.

Had hospitals not hired staff for whom no funds were budgeted, they would have saved EUR 91 million in 2022. Hospitals are successfully increasing their number of doctors. However, the most critical staffing problem in Slovak hospitals lies with nurses. Their numbers are slowly declining over time, and they cannot be fully or effectively replaced by merely increasing the number of healthcare assistants or doctors (more details in Chapter 5).

Table 2: Change in the number of employees (FTE) in 13 teaching and university hospitals, in EUR

	2015	2022	Growth in the number of employees	Increase	Impact of FTE on growth in personnel costs[12], million
Employee	**23 295**	**26 792**	**3 498**	**15 %**	**91**
Non-medical staff	4 824	6 431	1 607	33 %	30
Healthcare worker	18 471	20 362	1 891	10 %	62
*Doctor**	*4 238*	*5 041*	*803*	*19 %*	*43*
Nurse	*9 280*	*8 922*	*-358*	*-4 %*	*- 9*
Assistant	*3 369*	*4 577*	*1 208*	*36 %*	*21*

**The group also includes dentists, of whom there were 70 in hospitals in 2022.* *Source: NCZI, VfM*

Table 3: Growth in average employee wages (including overtime) in 13 teaching and university hospitals, in EUR

	2015	2022	Increase in %	Increase in EUR	Increase compared to legislation	Increase in personnel costs compared to legislation, million[13]
Employee	**1 189**	**1 922**	**62**	**733**	**14 %**	**70**
Non-medical worker[14]	728	1 216	67	488	19 %	10
Healthcare worker	1 310	2 145	64	835	16 %	61
*Doctor**	*2 420*	*3 556*	*47*	*1 135*	*11 %*	*16*
Nurse	*1 048*	*1 810*	*73*	*761*	*18 %*	*27*
Assistants	*760*	*1 408*	*85*	*648*	*30 %*	*11*

** The group also includes dentists, of whom there were 70 in hospitals in 2022.* *Source: NCZI, VfM*

Had wages grown only in line with legislation (the automatic wage indexation), hospitals would have saved EUR 70 million in 2022. However, the feasibility of this saving is questionable, as the wages of low-income workers grew the most significantly. Meanwhile, doctors, who have the highest incomes among hospital employees, outpaced the automatic wage indexation by 11 percentage points.

The new remuneration conditions in force since 1 January 2023 have significantly increased the wages of healthcare staff and put pressure on hospital costs. The average wage of a doctor in a hospital increased by 26% in 2023. The coefficients used to calculate wages increased the most for senior doctors (see section 3.1 for more details). RVS (2022) estimated the increase in personnel costs in inpatient care as a whole at EUR 84 million for indexation and the original mechanism alone, and a further EUR 358 million for the new mechanism The monitored hospitals account for approximately half of the total costs of all inpatient healthcare, and their personnel costs increased by EUR 137 million from 2022 to 2023.

The personnel costs budget must therefore also be linked to hospital budgets. When compiling the budget, it is necessary to make realistic assumptions about changes in FTE and wage developments; the legislative framework should mainly determine the lower limit of their development. Hospitals cannot operate in the long term with higher costs than their budgetary resources allow, and they should become significantly more fiscally responsible.

2.2 A well-designed reimbursement mechanism will increase transparency and hospital productivity

Current reimbursement mechanisms provide little incentive to increase production, are difficult to compare and lack transparency. Without transparent contracts featuring a uniform reimbursement mechanism, it is difficult to compare the reimbursements and production of individual hospitals and to ensure compliance with the public health insurance budget. Unit prices still vary significantly, not only between insurance companies for a given hospital, but also between comparable hospitals covered by the same insurance company (HCSA, 2024).

Today, hospitals are most commonly financed through monthly flat-rate payments for expected production (Box 4). The hospital receives a monthly flat-rate payment from the insurance company, which may be slightly adjusted according to the volume of reported production (the exact rate of adjustment depends on the details of the contract). Both the flat-rate payment and the expected production are the result of negotiations between the health insurance company and the hospital; therefore, they are not governed by any fixed, systemic rules.

Box 4: Monthly payments for expected production

Hospitals receive payments from health insurance companies mainly on the basis of pre-agreed monthly payments. HCSA (2024) states that in 2023, the following payment mechanisms prevailed among individual insurance companies:

- VšZP – prospective budget taking into account only inpatient healthcare (DRG and non-DRG)[15] .
- Dôvera – flat-rate payment for inpatient healthcare (separately for DRG and non-DRG).
- Union – global budget including inpatient healthcare (DRG and non-DRG), outpatient care and ancillary diagnostic services.

There are relatively small differences between the individual mechanisms, so for the sake of simplicity, all three are referred to in the revision as monthly flat-rate payments or flat-rate payments.

Flat-rate payments do not sufficiently motivate hospitals to increase production and reduce waiting times. Although the contracts contain a mechanism to adjust the flat-rate payment by the difference between the expected and actual production, in the case of VšZP in particular, the "penalty" is insufficient. For example, if a hospital delivers 50% less than expected, its reimbursement will only decrease by less than 10%. The production expected under the contract continuously exceeds the actual delivery by tens of percent, which explains the higher unit prices of VšZP. This also applies to individual hospitals – the more they fail to meet the expected production, the higher their actual unit price. However, flat-rate payments also have advantages – they ensure greater predictability for both hospitals and health insurance companies.

Negotiations between health insurance companies and hospitals mainly concern year-on-year increases in flat-rate payments and increases in personnel costs, and less so changes in production, medical results or increases in efficiency. Consequently, poorly set contractual volumes can persist for several years. A comparison of contracts between the state insurer VšZP and

[12] The difference in the number of employees multiplied by the average annual wage and employer costs.

[13] The difference between the average annual wage for 2022 and the budgeted wage according to current legislation, multiplied by the employer's costs and the number of employees in 2015.

[14] The wage of a non-medical worker is not linked to the wage index. In the table, the budgeted increase mirrors the growth in the average wage in the economy.

[15] The definition of DRG is given in Box 6.

the private insurer Dôvera shows that while Dôvera managed to contract expected production close to reality, VšZP overestimated it across all its contracts.

Table 4: Comparison of agreed (reference) and actual case-mix in 2023[16]

	Contractual case mix		Delivered case mix		% fulfilment	
	VšZP	Dôvera	VšZP	Dôvera	VšZP	Dôvera
NÚDCH	10 356	6 826	8 690	6 336	84	93
DFN BB	2 088	2 124	1 720	1 576	82	74
DFN KE	Not specified	5 356	3 491	4 190	-	78
UN BA	66 960	18 732	49 700	16 935	74	90
FNsP FDR BB	29 208	9 470	24 155	10 070	83	106
UNLP KE	29 148	15 198	25 472	14 985	87	99
UN Martin	26 844	9 777	22 986	9 082	86	93
FN Trnava	18 804	5 551	16 849	5 766	90	104
FN Nitra	19 464	7 807	15 195	8 121	78	104
FN Trenčín	22 908	6 555	16 936	6 011	74	92
FNsP Prešov	30 012	11 043	27 251	10 042	91	91
FNsP Žilina	27 888	6 015	22 988	5 495	82	91
FNsP Nové Zámky	14 160	10 536	11 823	10 191	83	97
Total	297,840	114 990	247 256	108 798	83	95

Source: Published contracts of VšZP, Dôvera, CKS DRG, VfM

Current reimbursement mechanisms and contractual terms are not easily comparable. Hospitals report their production, which is then audited by the health insurance company. However, each insurer may use different audit rules and take varying approaches to penalizing or rewarding the under-fulfillment or over-fulfillment of the expected production range (Appendix III). Health insurance companies may also differ in how they approach the inclusion (or exclusion) of outpatient and diagnostic procedures within the flat-rate payment.

Reimbursements for healthcare and hospital production, as well as consolidated versions of contracts, are not currently published. The publication of contracts therefore has very limited value, as it is impossible to compare actual health insurance reimbursements or unit prices using the available data. Each insurance company uses a different contract template, and consolidated versions are not made public. For example, the contract currently[17] in force between the private insurer Dôvera and University Hospital Bratislava dates back to 2013 and has since been amended 51 times. What is published is the original contract along with its 51 amendments, rather than a single consolidated version. As a result, finding a specific detail potentially requires studying 52 separate documents. The situation is similar for other health insurance companies and hospitals.

If every health insurance company paid the 13 MoH hospitals the exact same unit price for the care provided, the private insurers Dôvera and Union would have had to pay healthcare providers an additional EUR 27.6 million cumulatively in 2023. Conversely, the state insurer VšZP would have paid healthcare providers that exact amount less (ÚDSZ, 2024). However, such information cannot be obtained from publicly available sources; it can only be extracted from data available to the MoH (Box 5). VšZP had the highest unit prices in 2023, partly because it indirectly favors the under-fulfillment of expected production due to insufficient corrections of the differences between expected and actual production over time. An exception includes several hospitals in eastern Slovakia, which received the highest payments per unit of production from Dôvera. The problem of unequal financing was even more pronounced in the past (VfM, 2022). Thanks in part to the Programme decree on minimum payments for individual types of care from public health insurance (PHI), insurance companies' payments should better reflect the actual volume of care provided from 2024 onwards.

[16] Contracts between hospitals and Union do not contain such information.

[17] As at may 2024

Box 5: Effective case mix and unit prices

The MoH collects data from each health insurance company on the volume of care provided (the so-called effective case mix) and the total payments for this care. Outpatient care provided in hospitals is not included in these comparisons. Simply put, the effective case mix is the number of hospitalizations (cases) adjusted for their cost intensity. For example, a case mix of 10 may represent 10 hospitalizations of average intensity, or a single hospitalization that is 10 times as costly as the average. This metric serves specifically to enable the comparison of costs across different procedures and to evaluate hospital performance across various medical specialties.

The case-mix describes the care reported through DRG (Box 6), which is approximately 94% of inpatient care. The primary exception is psychiatric beds (see the list of DRG-irrelevant specialisations for more details). If a health insurance company holds a 50% share of a hospital's case mix, it means that 50% of the care was provided to that company's insured persons. Ideally, the share of the case mix should correspond directly to the share of reimbursements. If these shares do not match, it indicates that health insurance companies are paying different unit prices for the same level of care.

DRG reimbursements will increase the transparency of payments for hospital services. The DRG system was intended for gradual implementation as a reimbursement mechanism as early as 2024. Alongside this, performance-based contracts linked to DRG production were to be introduced, ensuring a direct correlation between hospital performance and revenues up to a specified limit. For 2024, the MoH, in cooperation with health insurance companies and hospitals, selected five specific care groups to be reimbursed based on actual production rather than a flat-rate basis.

At the end of 2024, the enabling provision of Section 67a(1)(j) of Act No. 581/2004 Coll. was adopted. This allowed the MoH to issue a decree establishing a mandatory DRG reimbursement mechanism in Slovakia. Throughout the first quarter of 2025, the MoH focused on preparing the full integration of DRG into direct payments. Consequently, a new decree will come into force on April 1, 2025, mandating DRG-based payments for 15% of all inpatient healthcare production. This primarily covers deliveries, neonatal care, knee and hip replacements, and selected oncological and cardiological hospitalizations.

The agreement on establishing social peace in healthcare between the Government of the Slovak Republic and the Medical Trade Union Association and on the organisation of mutual relations guarantees that in 2025, the DRG system will account for at least 15% of all inpatient care reimbursements, thereby fulfilling the requirements of the aforementioned decree.

Furthermore, the contracting parties have agreed to a scheduled expansion of this system. In 2026, direct payments for hospitalizations under the DRG system will be extended to approximately 30% of total hospital production. By 2027, this scope will further broaden so that the estimated production for DRG groups subject to direct payments represents approximately 40% of total hospital production.

Box 6: Diagnosis-Related Groups (DRGs)

Diagnosis-Related Groups (DRGs) allow individual hospital patients to be categorized into a manageable number of clinically significant and economically homogeneous groups. This categorization provides a foundation for comparing hospital production across the sector. Typically, the DRG tool consists of two fundamental parameters: relative weights and a base rate. Relative weights define the variation in costs across different diagnoses and hospitalizations, while the base rate represents the cost of an average patient hospitalization (the unit price). Simply put, the reimbursement mechanism for a specific DRG group is calculated by multiplying the base rate by the relevant relative weight.

The base rate is established differently across various countries, ranging from national or regional levels to individual hospital levels. The DRG tool directly links hospital production to its corresponding payments, which usually incentivizes an increase in hospital output (i.e., more hospitalizations). The introduction of a DRG reimbursement mechanism may also influence the length of hospital stays or shorten waiting times by motivating higher production levels. However, international experience suggests that the impact of DRG-based reimbursements on the overall cost of the hospital sector or the quality of healthcare remains unclear.

Services related to delivery and physiological newborns will **be reimbursed without limits**. This will support the improvement of service quality in order to attract patients without impacting overall financial resources. The remaining three groups of services **will be reimbursed with limits**. These groups currently represent hospitalization cases with longer waiting times.

Excluding these services from the flat-rate payment system and transferring them to direct payment under DRG will help to reduce waiting times. To ensure the predictability of the necessary financial resources, **a minimum limit of 120% of** the expected production for 2024 has **been set** for these groups at .

The planned 2024 launch of DRG reimbursements relied on a sectoral agreement that lacked a legislative basis. As a result, it has not yet been fully implemented. To be effective, the DRG payment mechanism must be established through formal legislation. According to the original sectoral agreement between the MoH, hospitals, and insurance companies, the DRG mechanism was supposed to be implemented via individual contracts. However, by the beginning of the second half of 2024, most of these contracts remained unamended. The MoH has now prepared a legislative definition for reimbursement mechanisms, setting a minimum limit for capped DRG groups at 110% of the 2025 expected production. The primary advantage of this approach will be a clear definition of the actors' obligations, which will remain stable and protected from arbitrary changes.

To maximize the benefits of introducing DRG as a reimbursement mechanism, it is essential to increase payment transparency and contract clarity. **All teaching and university hospitals should utilize a uniform, legislatively defined reimbursement mechanism with every insurance company, similar to the model used in the Czech Republic** (Box 7). **Furthermore, consolidated versions of these contracts should always be made public.** The MoH should also ensure the disclosure of additional data necessary for evaluating contracts and reimbursement amounts. Hospitals should clearly detail the revenues and costs associated with providing healthcare for each insurance company in their annual reports, using a structure consistent with the underlying contracts. This transparency would allow for easy verification of whether insurers are paying equal amounts for the same services and whether these reimbursements align with the expected costs of care.

Box 7: Financing of Czech hospitals

The primary instrument for regulating and establishing the financing of the Czech healthcare system, including its hospitals, is the so-called reimbursement decree. This ensures that providers have clear foresight regarding the reimbursements they can receive for specific procedures, including set limitations (typically maximum caps for non-homogeneous procedures) and audit rules. Since 2021, individually negotiated reimbursements between hospitals and health insurance companies have constituted only an insignificant portion of total funding (European Observatory on Health Systems and Policies, 2023).

The Decree is published by the MoH of the Czech Republic along with a detailed justification. It is either the result of a sectoral agreement between representatives of providers and insurance companies or, in the absence of an agreement, it is established directly by the Ministry. In the case of inpatient care, an agreement is usually not reached. Beyond the scope of the Reimbursement Decree, hospitals and insurers may sign so-called reimbursement amendments to their basic contracts. This typically occurs only for specific procedures, such as those not covered by the Decree or when unique conditions are negotiated.

The Decree for 2025 defines reimbursements for procedures according to reimbursement groups and CZ-DRG relative weights:

- Flat-rate reimbursements - non-homogeneous services listed in the list of services requiring healthcare limitations due to high consumption (45.3% of expected reimbursements in 2025).
- Reimbursements excluded from the flat rate – Medium to high-homogeneity procedures with an individual base rate and no need for volume limitations; this includes, for example, neonatal care and deliveries (29.9% of expected reimbursements in 2025).
- Case-based rate reimbursements - Homogeneous procedures with a uniform national rate where production volume can be left to the hospitals' discretion. This also includes specialized procedures tailored to teaching and university hospitals (22% of expected reimbursements in 2025).
- Specialized reimbursements - Specifically defined payments for psychiatric care (2.7% of expected reimbursements in 2025) and residual components not included above, such as hospital pharmacies.

In addition to the basic contract, which is based on the so-called framework contract and is almost identical across hospitals and insurance companies, Czech health insurance contracts also include reimbursement ammendments. There is also a special contract for pharmaceuticals and a list of agreed services provided by the hospital.

In the long term, it is essential to ensure that basic rates (unit prices) reflect the legitimate costs of hospitals. Until 2023, basic rates were not derived from actual costs but from so-called "DRG available resources." These were funds allocated by health insurance companies for inpatient care, adjusted only by year-on-year increases in the public health insurance budget. While this approach ensured consistency with the budget, it failed to address the systemic imbalance between hospital costs and revenues. If insurance companies historically underpaid for inpatient care, this insufficient funding became the baseline for subsequent years, causing underfunding to persist. However, the lack of funds did not trigger cost reductions; instead, costs continued to rise even without coverage, leading to further indebtedness. Consequently, in 2024, additional funding was provided for inpatient care beyond standard indexation to fully cover hospital costs. Publishing basic rates based on both actual costs (what hospitals need) and available resources (what the budget allows) will significantly increase financial transparency.

It is appropriate to differentiate these rates to reflect the varying levels of complexity in patient treatment. Large general hospitals provide more comprehensive care than small regional facilities and therefore require more expensive equipment and specialized staff, even for routine procedures. In several countries, rates account for this complexity or regional specifics, such as differing price levels. In the Slovak context, basic rates could be linked to the hospital categories established by **the Hospital network optimization** (HNO, see Annex I for details). Even if a uniform basic rate were introduced, it would still be necessary to implement an availability payment or another form of surcharge to cover the higher fixed costs of these more complex facilities.

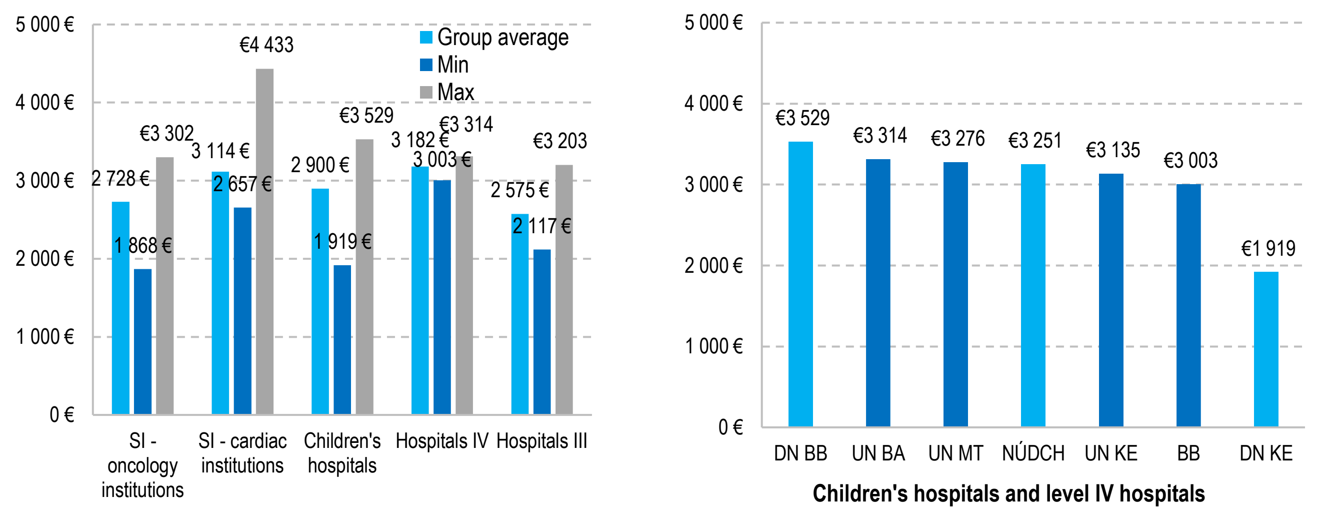
3 Hospitals have room to increase cost efficiency

In addition to increasing revenues from health insurance companies, hospitals must improve the cost-effectiveness of their operations. Significant differences in efficiency are visible even among comparable hospitals. There is room for improvement particularly in personnel costs and the procurement of pharmaceuticals, special medical materials, and equipment. Furthermore, hospitals that currently outsource CT, MRI, or laboratory services to external providers operating on their own premises could achieve higher revenues by managing these services internally. However, the total potential for efficiency gains is difficult to quantify due to a current lack of granular data. It is necessary to gradually cultivate this data within the DRG system and standardize cost reporting down to the level of medical programs according to the HNO. This will allow for more accurate evaluations and benchmarking between hospitals.

There are large differences in cost efficiency between hospitals (Figure 19). In 2023, the cost of an average hospitalization case[18] in level III hospitals[19] ranged from EUR 2,117 (Michalovce Hospital) to EUR 3,203 (St. Michael's Hospital). Part of these differences can be explained by the complexity of the hospitals and their specific roles within the HNO. For instance, teaching or specialized hospitals face higher costs for the same type of hospitalization because they must maintain the capacity and specialized equipment required for the most critical cases, even though they provide routine care most of the time. Tertiary hospitals abroad typically have higher unit costs as well.

Differences in unit costs persist even between hospitals within the same peer group. The most likely explanation lies in varying levels of cost efficiency. For example, the DN KE operates at 46% lower unit cost than the DN BB. If hospitals with above-average unit costs were to match their group's average, 19 MoH hospitals would free up EUR 27 million (with EUR 23 million coming from the 13 major state hospitals). If they reduced costs to the level of the most efficient hospital in their respective groups, the potential savings could reach EUR 168 million for the group of 19 hospitals and EUR 135 million for the core group of 13 (Table 5).

Figure 19: DRG-relevant costs for standardised hospitalizations[20] in 2023



Note: Specialised institutions are specialised institutions, hospitals are general hospitals, divided into similar hospitals according to CKS DRG. *Source: MOH SR (CKS DRG), VfM*

The total level of inefficiency may be even higher. This is because the calculation of potential savings is based on a comparison of hospitals categorized within the same peer group according to the HNO (left graph). The underlying assumption is that at least one hospital in each group operates efficiently. However, if all hospitals in a given group suffer from common inefficiencies, this will not be reflected in the estimated potential. Consequently, it is likely that the potential is currently underestimated. While DRG data currently allow for benchmarking hospitals against one another, gradual data

18 Hospitalization case with a relative weight of 1, hereinafter also referred to as a "performance unit".

19 According to CKS-DRG.

20 Standardised hospitalizations express the number of hospitalization cases, taking into account their cost. For example, a hospitalization case that is three times as expensive as the average hospitalization case is counted as three standardised hospitalizations. In DRG terminology, this is a hospitalization case with a relative weight of 1.0.

refinement will eventually enable more granular comparisons between individual medical programs as defined by the HNO. This detailed analysis will ultimately provide a much more accurate estimate of potential savings.

Table 5: Estimated cost inefficiency of 19 MoH SR hospitals by individual groups, in EUR million

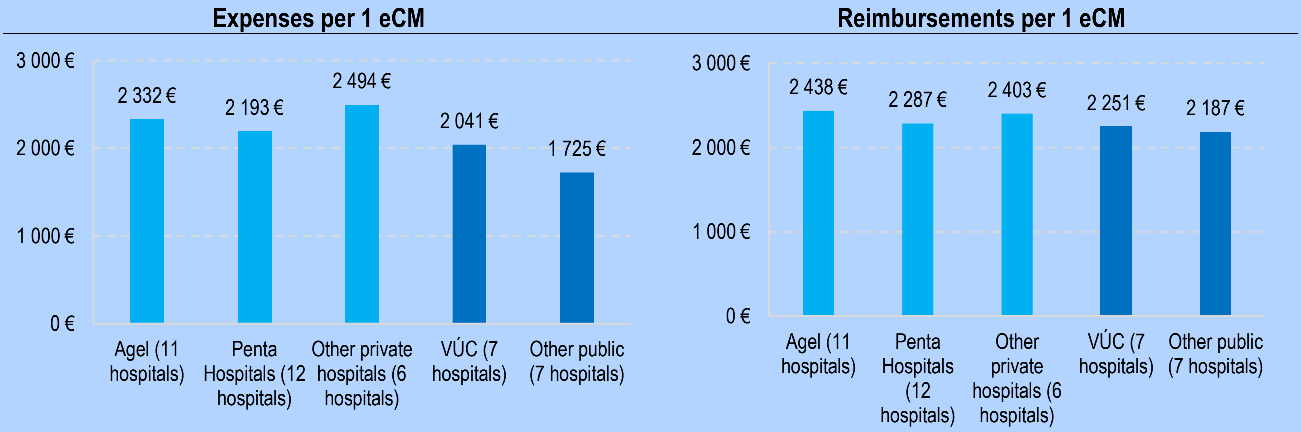
Hospital groups	Reduction in costs to the group average	Cost reduction to group minimum
SI - oncology institutions	4.2	16.8
SI - cardiac institutions	0.0	11.6
Children's hospitals	8.7	30.1
Hospitals IV. (excluding children's hospitals)	12.9	38.2
Hospitals III.	1.7	71.1
Total	**27.5**	**167.9**

Note: Excluding oncology and cardiology institutes, this includes 13 teaching and university hospitals of the MoH SR and the hospital in Poprad. *Source: MoH SR (CKS DRG), VfM*

Box 8: Public hospitals are not less cost-effective than private ones

According to available data on the costs of standardized hospitalisations[1], Slovak public hospitals are not less cost-effective in categories where they can be directly compared with the private sector. This specifically applies to Level I and II hospitals, where both private and public providers have significant representation. Similar findings are reported by international research (European Observatory on Health Systems and Policies, 2022), which finds no systematic differences in the cost-effectiveness of public and private hospitals.

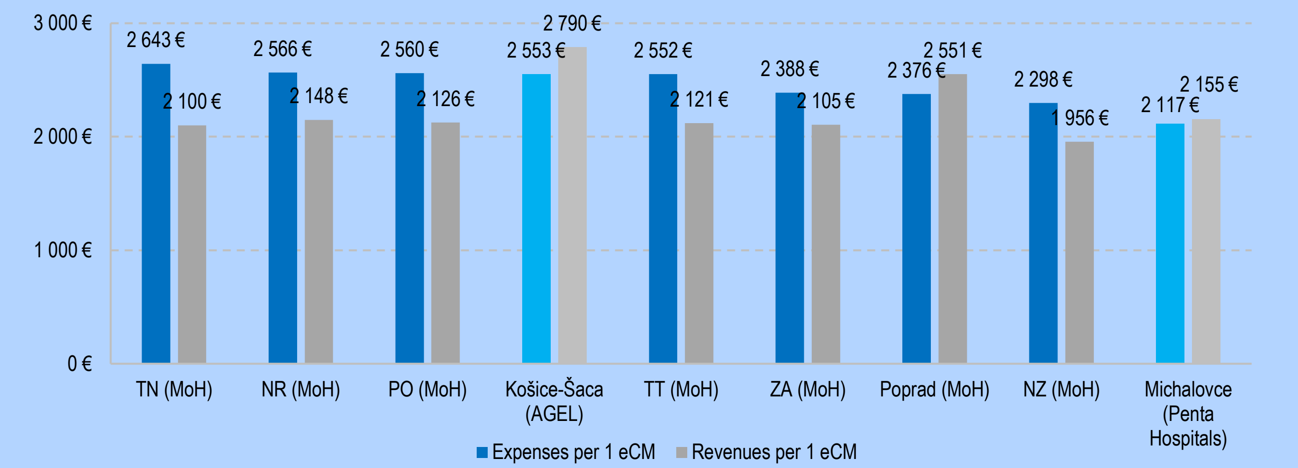
Figure 20: Costs and reimbursements for standardised hospitalization in hospitals I and II (characterstically similar hospitals) according to CKS DRG, 2023



Note: Piešťany was not included in other public hospitals due to methodological shortcomings in their DRG-relevant costs. *Source: MoH SR (CKS DRG), VfM*

The superior financial performance of private hospitals is primarily due to better contractual conditions from health insurance companies. Jeurissen et al. (2020) identify the better conditions of private hospitals as one of the reasons why their share of inpatient healthcare is growing in some countries. In Slovakia, too, private hospitals are able to obtain more from public health insurance than public hospitals, especially in the case of reimbursements from VšZP.

Figure 21: Costs and reimbursements for standardised hospitalisations in Group III (characterstically similar hospitals) according to CKS DRG, 2023

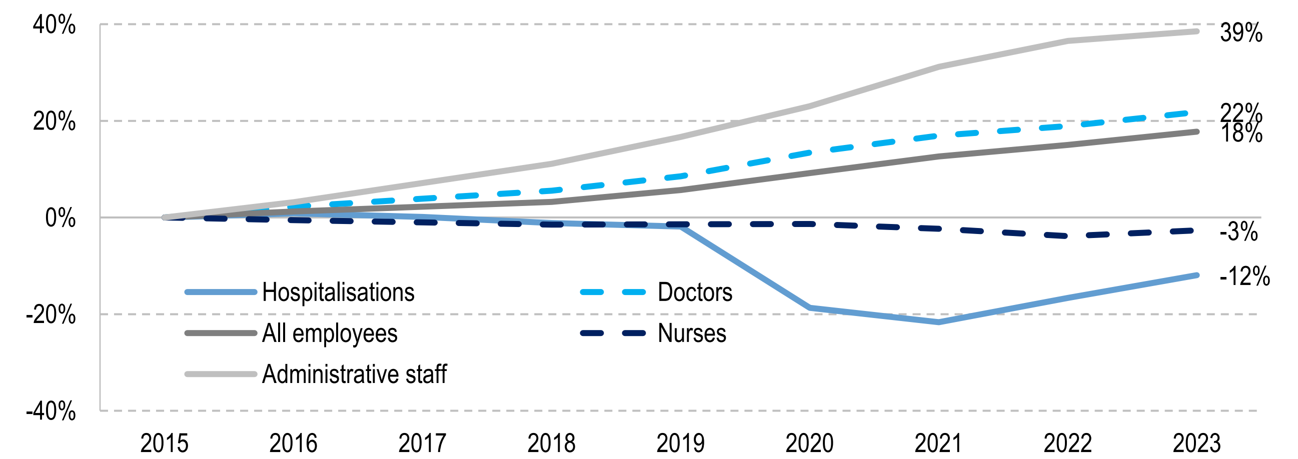


Source: MoH SR (CKS DRG), VfM

3.1 The greatest potential lies in evaluating the efficiency of wage costs

While hospital staff numbers are rising, the number of hospitalization cases is not. The total headcount across the 13 teaching and university hospitals has increased by 18% since 2015, now exceeding 27,000 employees. The most significant growth occurred among administrative staff (39%), followed by a notable increase in the number of doctors (22%), who totalled over 5,000 in 2023. This spike in medical staff may partially be attributed to hospitals preparing for the impending retirement of a large cohort of senior doctors. However, this increase in employment has not translated into higher output; hospitalization cases plummeted during the Covid-19 pandemic and have yet to return to pre-pandemic levels.

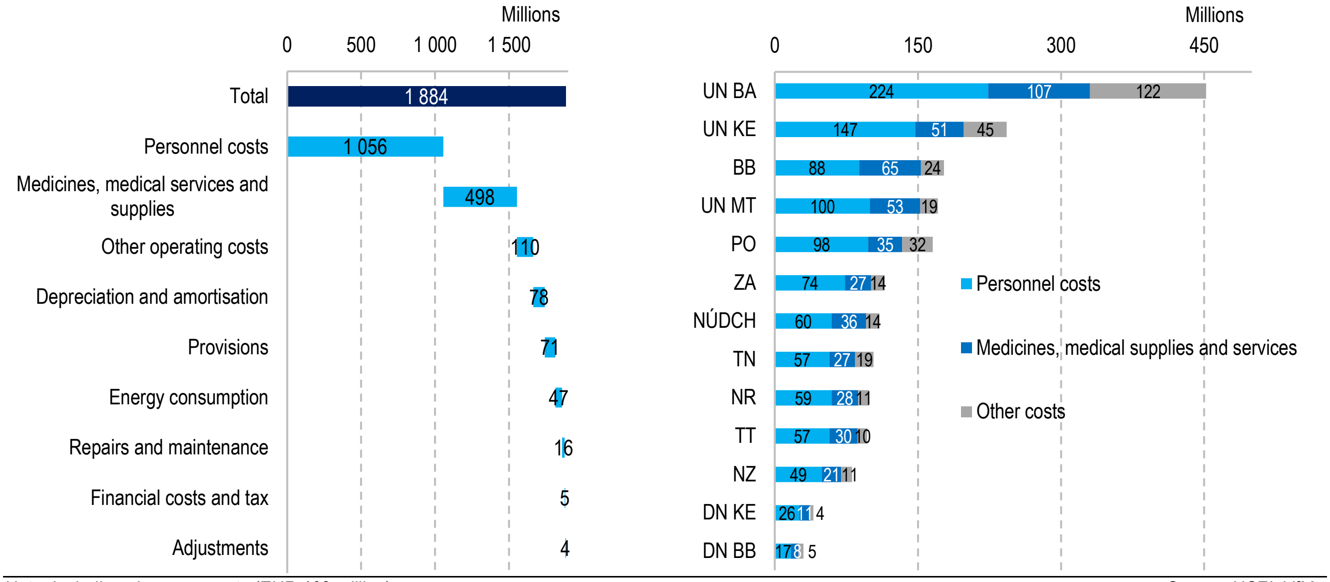
Figure 22: Trend in the number of employees (FTE) in university and teaching hospitals and hospitalization since 2015



Source: NCZI, VfM

Personnel costs account for 56% of total hospital expenses and represent the most significant opportunity for efficiency gains. This may be due to differences in the complexity of production and the associated higher costs (e.g. for ŠZM, blood or technology depreciation), the use of external suppliers for certain activities (e.g. outsourcing of cleaning), but also differences in the efficiency of labour utilisation.

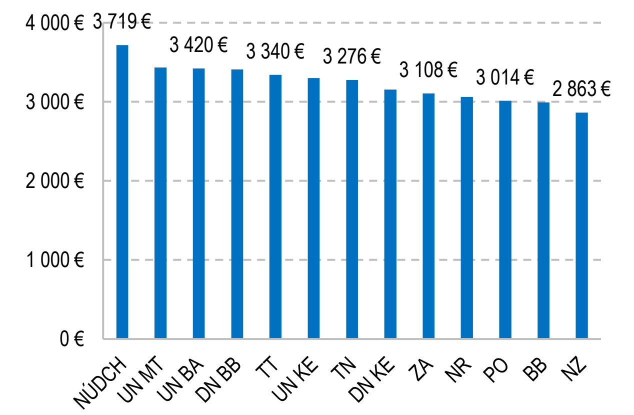
Figure 23: Cost structure of teaching and university hospitals



Note: Including pharmacy costs (EUR 103 million). *Source: NCZI, VfM*

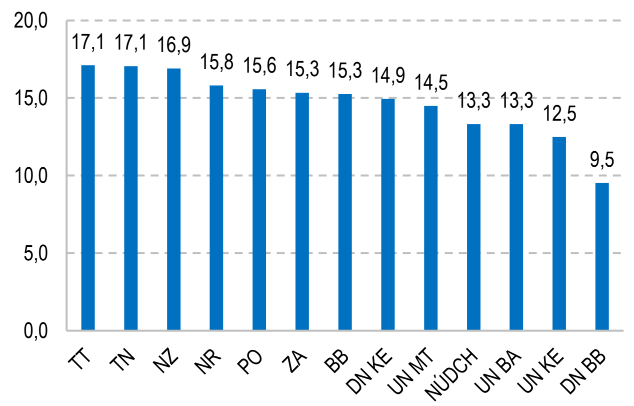
There are large differences between hospitals in the efficiency of personnel costs, particularly when calculated per unit of work. While the differences in remuneration per 1 FTE are not so significant (Figure 24), they are more significant in terms of the value of production that hospitals can generate per 1 FTE (Figure 25). However, it is not the case that workplaces with higher remuneration also have higher productivity.

Figure 24: Monthly personnel costs of 13 teaching and university hospitals per 1 FTE



Source: NCZI, MoH SR, VfM

Figure 25: Production of 13 teaching and university hospitals in case-mix per 1 FTE



Source: NCZI, MoH SR, VfM

If the productivity of employees were brought up to the average of their respective peer groups according to CKS DRG, the 13 teaching and university hospitals would free up nearly EUR 39 million annually. Some of the differences in unit personnel costs (Figure 24) can be attributed to regional wage variations (Annex IV). However, labor productivity should be more consistent, especially among comparable hospitals. While lower output per FTE might suggest an excess of non-medical or administrative staff, data indicates this is not enitrely true for hospitals under analysis(Annex IV). Instead, it is most likely a direct result of varying efficiencies in how labor is utilized.

Inefficiency in personnel costs is probably higher than the comparison of hospitals suggests. Current benchmarking assumes that at least one of the hospitals in a given group uses its personnel costs efficiently. If all hospitals share a certain degree of inefficiency (e.g. caused by collective agreements), this will not be reflected in the estimated savings, which would then also be underestimated.

To accurately determine inefficiency, higher-quality data mapped down to the level of medical programs under the HNO is required. Cost data is collected in DRG, but historically its allocation to departments has not always been consistent.

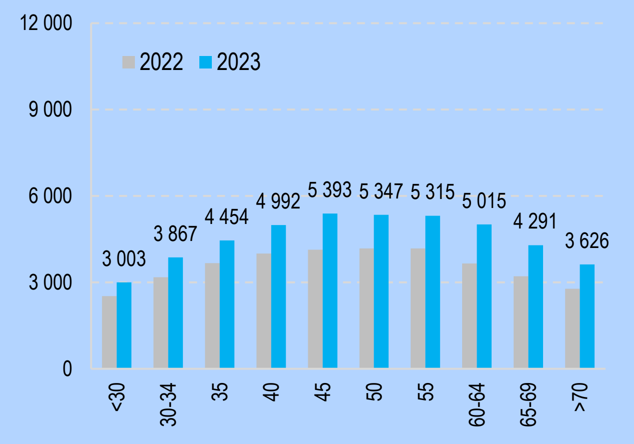
In addition, the organisational structure of hospitals is within the competence of each hospital, and thus, the specific breakdown may not be mutually comparable, which makes analysis difficult. Assigning costs to medical programmes according to the HNO will eliminate similar problems. Such data will also provide better information to hospital managers and directors, as well as the MoH itself.

Efficiency should be examined particularly among senior doctors, whose high wages have been guaranteed by law since 2023 based on their years of practice, regardless of their performance, expertise, or the type of hospital in which they work. Due to a one-time increase and the introduction of a new remuneration mechanism, the average wages of hospital doctors rose by 26% in 2023 to EUR 4,410[21] . The top 10% of doctors earned EUR 6,692 per month. Furthemore, the top 60% of doctors are, on average 9.2 years older than the bottom 40% of the income distribution.

Box 9: New automatic wage indexation rules implemented in 2023 primarily benefit senior doctors

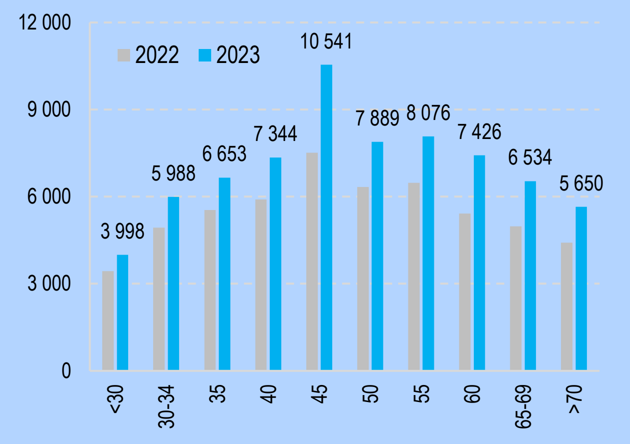
New conditions of the automatic wage indexation effective from 1 January 2023 significantly increased the wages of healthcare employees. The coefficients used to calculate wages increased the most for doctors, though they rose to varying degrees for all hospital healthcare workers. Along with the increased coefficient, the amendment also includes years of hospital experience in the final wage calculation.

Figure 26: Average monthly gross wage of doctors in 13 teaching and university hospitals by age, EUR



Source: Social Insurance Agency, VfM

Figure 27: Average of the top 20% earning doctors in 13 teaching and university hospitals by age, UER

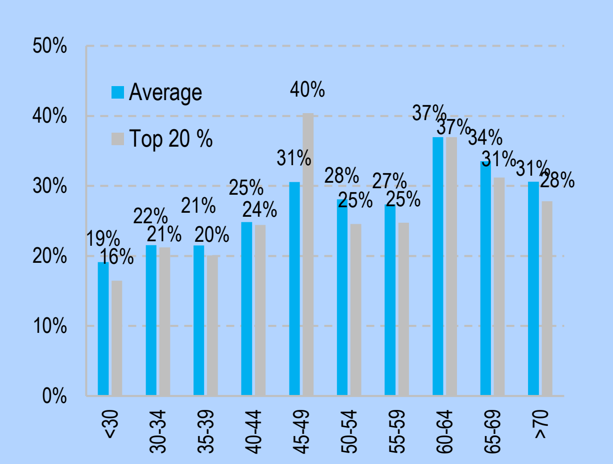


Source: Social Insurance Agency, VfM

Older doctors with long experience benefited the most in 2023. While wages increased across the board, the largest increases went to senior doctors who were already among the higher-paid. While doctors over 50 saw their wages grow by an average of 30%, those under 40 saw an increase of 21%. The largest increase occurred among doctors aged 60–64, whose wages rose by 37%, or roughly EUR 1,354 per month. For 2024 and 2025 combined, a further 18% increase in healthcare wages was budgeted, meaning that 2025 medical wages should be on average 18% higher than the 2023 values. In the past, actual wage growth has matched or exceeded the budgeted increase (Figure 18).

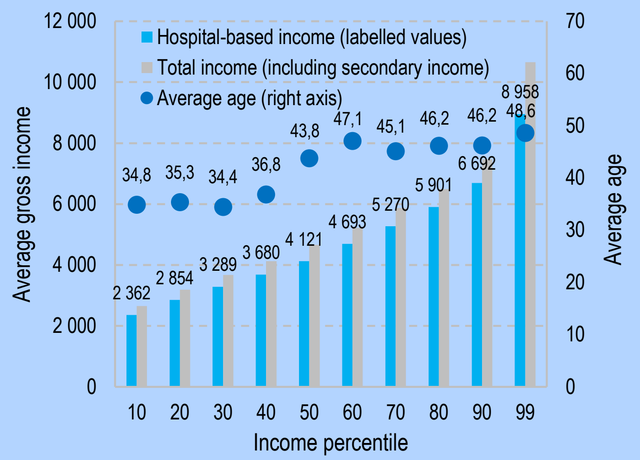
[21] Average gross wages, including overtime, for year-on-year comparison and taking into account secondary income, calculated according to the procedure described in Box 9. They may differ slightly from NCZI reports.

Figure 28: Year-on-year growth of the average wage of doctors in 13 teaching and university hospitals by age



Source: Social Insurance Agency, VfM

Figure 29: Hospital doctors' income distribution in 13 teaching and university hospitals in 2023



Source: Social Insurance Agency, VfM

Information on doctors' incomes comes from anonymized monthly social insurance assessment bases. Hospital doctors were defined as those who maintained an employment relationship with one of the 13 teaching and university hospitals for the entire year. Since Social Insurance Agency data does not specify workload size or overtime volume, the distribution analysis only includes doctors whose hospital income corresponded to at least the minimum basic wage of a non-certified doctor (in 2023, this was EUR 1,816.5 per month or EUR 21,798 per year).

Hospitals practically do not monitor the secondary employment of their doctors, yet 49% of them had some side income from dependent work in 2023. More than half of these secondary earnings came from Slovak universities (51%). The average side income for all hospital doctors was EUR 1,102 per month, with a median of EUR 529.

In 2023, nearly 461 hospital doctors had additional income exceeding EUR 2,000 per month. Data from the Social Insurance Agency does not allow for a direct assessment of workload size, but an income over EUR 2,000 suggests a relatively large workload. These doctors earned an additional EUR 3,477 per month on top of an average wage of EUR 3,921 from their primary hospital. Only earnings from employment are included; business income was not considered. However, some hospital doctors also work in their own outpatient clinics, where they may earn non-wage income (e.g., profit shares).

Hospitals should monitor the total workload of their doctors to ensure the efficient and fair use of labor, including adequate performance-based pay. Senior doctors are more likely to supplement their hospital wages. Those with side incomes over EUR 2,000 per month are, on average, 10.2 years older than those with no secondary employment (the median difference is 12 years). This may be due to an unequal distribution of the workload; younger doctors work more hours per month on average, including overtime.

The mechanisms introduced in the automatic wage indexation valid from 2023 should be reviewed. The principle of remuneration for years of service should be reduced, while the principle based on physician productivity—linked to professional growth and other activities such as management, education, or research—should be strengthened[22]. In 2024, even in a small hospital, a certified doctor with 30 years of experience has a basic (minimum) wage of EUR 4,238, regardless of specialty or performance. This may not leave sufficient funds for incentives that motivate higher productivity and quality of care.

It is appropriate to create the position of university physician so that hospitals and universities are mutually aware of the combined remuneration of doctors who also serve as academics (teachers and researchers). Since both incomes flow from public sources, the total workload and the total income derived from these activities should be transparent.

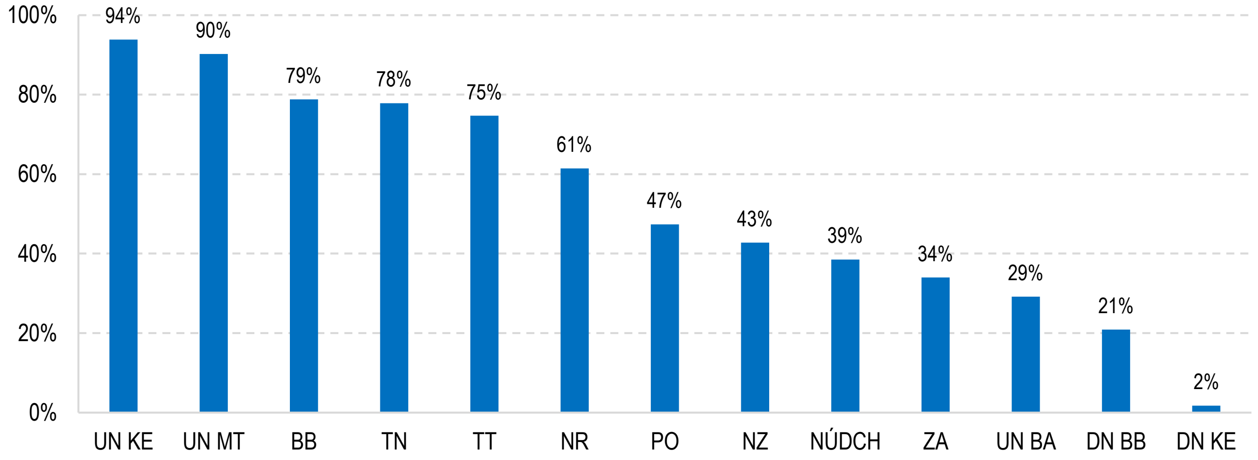
3.2 Rents for private CT/MR and laboratory facilities should be higher

[22] Such remuneration may already be in place today, but due to automatic salary increases for years of service, there may not be sufficient funds available for it.

Outsourcing in healthcare has expanded in recent years from non-clinical services to direct clinical care, such as inpatient emergency services, anesthesiology, laboratory medicine, and radiology. However, outsourcing these services carries inherent risks. Hospitals lose direct control over examination availability and clinical quality. Furthermore, these arrangements can become financially disadvantageous for hospitals in the long term, particularly if prices escalate over time.

Most large hospitals provide internal procedures categorized under ancillary diagnostic services (SVaLZ: CT and MRI examinations, laboratory diagnostics). Since ancillary diagnostic services are essential to patient care in hospital, hospitals have been recently purchasing the necessary (primarily imaging) equipment. Ancillary diagnostic services can also be provided by private providers. Several of them operate their facilities directly in hospitals.

Figure 30: Share of internal ancillary diagnostic services services (2022)



Source: MoH SR , VfM

The largest tertiary hospital (UN BA) provides only one-third of ancillary diagnostic services internally. Leasing space appears to be particularly advantageous for private companies. Total payments from insurance companies to Dr. Magnet, which also provides CT and MR services for the University Hospital in Bratislava, reached almost EUR 7.5 million in 2022.[23] According to CRZ, it will pay only EUR 220,000 annually for the lease of premises at UNB, plus energy consumption for both workplaces in Ružinov and at the hospital in Kramáre. The workplaces are operated directly in the hospital, and therefore its patients directly use the services of these providers.

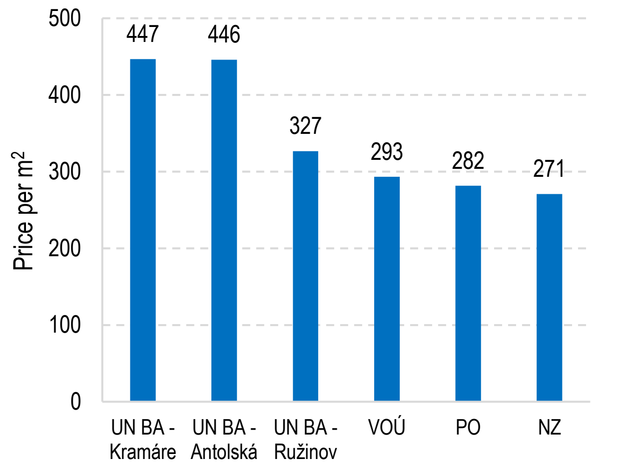
Box 10: Pro Diagnostic Group

Pro Diagnostic Group is the largest provider of MRI and CT examinations in Slovakia, operating primarily within hospital premises. It currently runs 14 diagnostic centers, most notably Dr. Magnet and PRO Magnet. According to Finstat, Pro Diagnostic Group's 2023 annual profit reached EUR 3.69 million on revenues of EUR 6.36 million. Total sales for Dr. Magnet in 2023 were nearly EUR 11 million. These companies' high turnover and profitability stem from providing services directly to hospital patients, supported by contractually guaranteed reimbursements from public health insurance.

An example of better conditions with an external provider is the Eastern Slovak Oncology Institute (VOÚ). It has a contract with PRO Magnet. The rent consists of two parts. A fixed component of rent per m^2 of space and a variable component, set at 2.5% of the tenant's turnover. In this case, turnover refers to the agreed payment by insurance companies to PRO Magnet from public health insurance. This is a much more advantageous way of renting for the hospital, as it also participates in the company's revenues from PHI per patient.

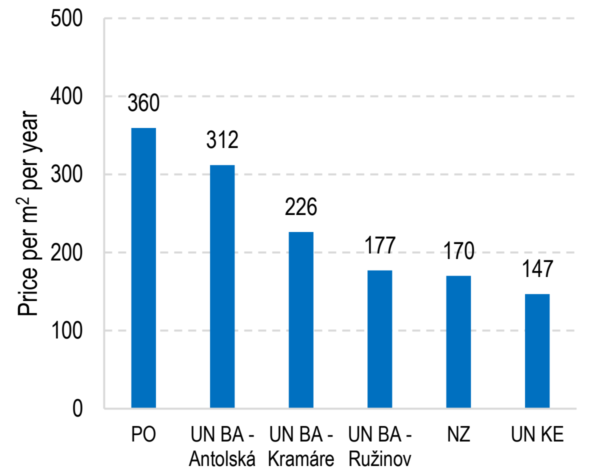
[23] According to information published on the PRO Diagnostic Group website (Box 10), Dr. Magnet s.r.o. has three workplaces, specifically at UNB in Ružinov and Kramáre and at the Ružinov Polyclinic.

Figure 31: Average rental price of CT/MR workplaces in 2024, EUR



Note: Prices adjusted for the consumer price index. *Source: CRZ, VfM*

Figure 32: Average rental price of laboratory workplaces in 2024, EUR



Note: Prices adjusted for the consumer price index. *Source: CRZ, VfM*

If other hospitals contracting CT and MRI providers adopted this VOÚ model—incorporating a percentage of tenant turnover into the rent—they would generate an additional EUR 320,000 annually. UN BA alone would gain additional income of more than EUR 200,000. However, according to the law on state property management, state hospitals (semi-budgetary organisations) must lease their premises through a public tender in which only fixed-price bids can be accepted. Joint-stock companies (e.g. VOÚ) face no such restrictions. If UN BA operated CT and MR services internally, its financial results would likely be even more positive.

Box 11: Rental prices in hospitals should correspond to expected profitability

Minimum rental prices in hospitals must, by law, correspond to at least the market value of rents for premises used for comparable purposes. Under the State Property Management Act, state hospitals select the best bid from a public tender. All bids must correspond at least to the rent for similar premises for comparable purposes. Determining the market price of hospital premises is not easy.

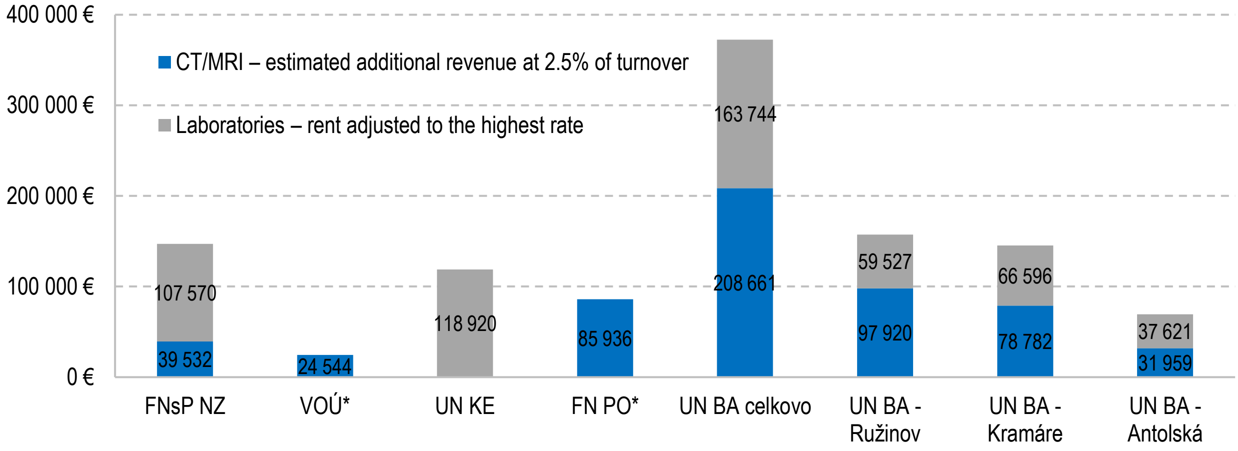
UN BA's prices correspond more to the rent for office space than to profitable healthcare services in hospital premises. According to the contracts between UN BA and Medirex, the rent for the premises at Antolská was EUR 22.5 per m^2per month, at Kramáre an average of EUR 19 per m^2, and at Ružinov EUR 12.8 per m^2. At the same time, rents for office space in Bratislava range from EUR 10 to EUR 16, with the best rents matching those at the hospital on Antolská. Administrative buildings only rent space, while hospitals also provide lucrative and stable access to customers.

It is common for rents to reflect the expected profitability of tenants, and hospitals must do the same. For example, Bratislava's Old Town rents space under some Christmas stalls from EUR 250 to EUR 438[24] per square metre, depending on the sales period. The rental price thus also reflects the expected profitability of the business. Rents at airports and shopping centres behave similarly. Such principles should also apply to hospitals, which directly supply a significant part of their business to healthcare facilities (MR/CT and laboratories), making them relatively profitable (Table 7).

As with CT/MR, it is advisable to set up similar contractual adjustments with laboratories. If hospitals adjusted their rental prices to the level of the Prešov Teaching Hospital, they would collectively gain an additional EUR 400,000 annually. Rental prices per m^2 of leased space vary between hospitals. While there are no significant differences in the average prices of space for CT and MRI equipment, price per m^2 for laboratory diagonostic space varies more significantly. The average rent per square metre at the University Hospital in Košice in 2024 was less than EUR 150 per m^2. At the same time, the rent at the Teaching Hospital in Prešov was over EUR 350 per m^2 in the same year.

[24] Converted from 1-day rentals to a 30-day month.

Figure 33: Increasing rents could bring hospitals from EUR 543,000 to EUR 711,000 per year[25]



** Values given when adjusted to the highest rent.* *Source: CRZ, IZA, VfM*

For smaller hospitals, renting and contracting private laboratory providers may be more advantageous than owning their own laboratories. For smaller volumes, a large private laboratory can save on the range of services it provides to other healthcare facilities. Conversely, large hospitals such as Roosevelt Hospital in Banská Bystrica or Trnava Teaching Hospital provide these services themselves at a profit. BB uses external laboratories for only 12% of all services, which is also common for large hospitals in the Czech Republic (Box 12).

Table 6: Total profits of companies providing laboratory diagnostics, in EUR million

	2019	2020	2021	2022	2023
Medirex	-1,6	6,6	17,6	17,5	3,8
Unilabs	-0,9	0,9	5,7	0,8	-5,4
Clinical Biochemistry Group	1,9	2,8	8,5	9,9	-
Synlab	0,04	2,3	4,0	1,8	1,0

Source: Finstat, VfM

Table 7: Profit as a percentage of total revenues of companies providing laboratory diagnostics, in %

	2019	2020	2021	2022	2023
Medirex	-2	8	17	20	0
Unilabs	-1	1	5	1	-6
Clinical Biochemistry Group	12	14	30	39	-
Synlab	0	13	18	10	6

Source: Finstat, VfM

Box 12: Ancillary diagnostic services in the Czech Republic

Large university hospitals in the Czech Republic mostly provide laboratory diagnostics and CT and MRI services directly through their own departments. According to the WHO, large Czech hospitals provide laboratory and CT services themselves without using external providers. The University Hospital in Brno uses the services of external laboratories only to a small extent, accounting for less than 10% of the total volume of diagnostics it performs. The hospital only leases space to private providers in specific cases involving orthopaedic and dental laboratories. It does not use external suppliers to perform MR and CT diagnostics and provides these services through its own department.

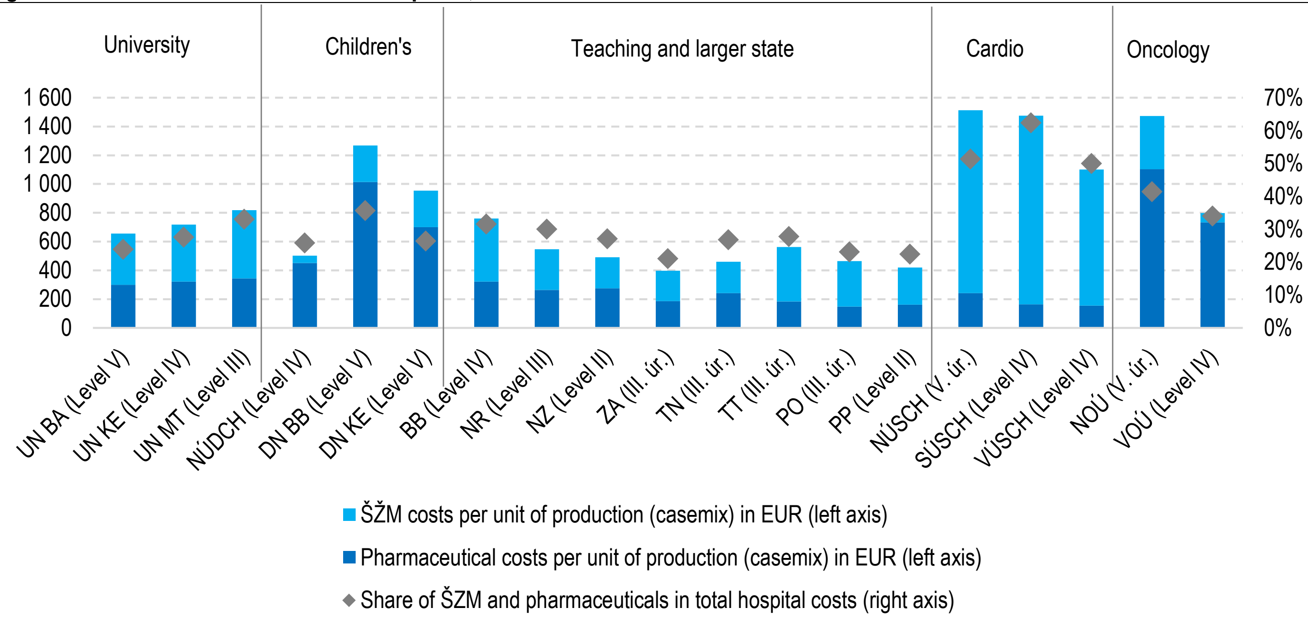
The number and distribution of medical devices covered by health insurance is regulated in the Czech Republic. Since 2014, the Czech Republic has had a Commission for the Assessment of the Distribution of Medical Devices and Capacities Covered by Health Insurance established at the MoH. The Commission meets four times a year or on an ad hoc basis as needed and issues opinions on the renewal of equipment or the inclusion of new devices in the public health insurance system. Its main task is to assess the resources covered by public health insurance for medical equipment, such as CT and MRI machines. The assessment is carried out from the point of view of effectiveness in terms of necessary availability and efficient utilisation, and the commission also assesses the procurement of new technologies and their inclusion in the public health insurance system.

[25] Details of the calculations are provided in Annex VI.

3.3 Hospitals should implement centralized procurement for specialized medical materials, pharmaceuticals, and medical equipment.

Pharmaceuticals and specialized medical materials (ŠZM) account for a significant part of hospital costs, with the share and structure of these costs ranging from 20-60% of total costs, depending on the type of hospital. In cardiovascular institutes, the costs of ŠZM predominate due to the higher utilization of expensive ŠZM, such as stents.

Figure 34: Cost structure of selected hospitals, 2019



Note: Hospital levels according to the UN

Source: MoH SR, IZA

Box 13: Reference pricing of pharmaceuticals and ŠZM

The prices of categorised pharmaceuticals and ŠZM are strictly regulated in Slovakia, with long-term price referencing of pharmaceuticals, medical devices (including ŠZM) and dietary foods, thanks to which prices—particularly for new pharmaceuticals—are kept relatively low. Upon entering the Slovak market, the price of a pharmaceutical must not exceed the average of the three lowest prices within the EU. The final price includes VAT and the regulated margins of the distributor and the pharmacy. However, excessively low prices can lead to issues, such as supply disruptions or the decision by manufacturers to bypass the Slovak market entirely.

Despite sharing the same legislative framework, price referencing is not as effective for ŠZM as it is for certain categorized pharmaceuticals. The primary reason is the difficulty of conducting international price comparisons. The EU does not require uniform product registration; consequently, a specific ŠZM may be registered under a different name in each member state. In practice, it is up to the distributor to choose which prices to submit during the categorization process. They often provide the minimum required number of reference prices with a wide variance, which ultimately drives up the average price[26]. Similar tactics can also be observed in the pharmaceutical sector.

Hospitals procure most pharmaceuticals and ŠZM separately through flat-rate payments. These can range from items costing a few cents (e.g. saline solutions, painkillers, bandages) to very expensive items. These pharmaceuticals and medical materials are part of flat-rate payments for hospitalization (or, in the future, DRG payments) and are not reimbursed directly by health insurance companies. Since the actual procurement price may be lower than the amount set within the flat-rate case payment, there is an inherent opportunity for savings.

[26] This issue also affects other EU Member States. In an effort to address it, the initiative to establish the EUDAMED European database for medical devices was launched, alongside the introduction of Unique Device Identification (UDI) numbers. A highly effective tool beyond these planned measures would be the implementation of a pan-European database of public reimbursement levels for medical devices across individual EU markets. Such a database would significantly contribute to the objective setting of reimbursement rates and the saving of public funds.

Some pharmaceuticals and ŠZM (mainly the more expensive ones) are reimbursed directly by health insurance companies at the value reported by the hospital, which may not be sufficiently motivated to negotiate lower prices. Certain pharmaceuticals and ŠZM are reimbursed as add-on items[27]at the acquisition price (subject to an officially determined maximum reimbursement ceiling). With few exceptions where health insurance companies handle procurement, hospitals purchase these items independently. In doing so, they bear no responsibility for potentially higher prices and lack the motivation to negotiate them down, which may negatively impact procurement efficiency (Box 14).

Box 14: Do hospitals procure pharmaceuticals and medical materials at excessive prices and inefficiently?

More than 20% of the EUR 800 million debt of the largest state hospitals[28] consists of liabilities to suppliers of pharmaceuticals and medical supplies, which may drive the procurement prices of pharmaceuticals and ŠZM. Poor payment discipline, delyed invoce payments and the subsequent periodic debt relief for hospitals lead to even higher margins for suppliers, complicate entry of smaller suppliers and generally increase procurement costs for state hospitals.

Furthermore, several documented cases suggest that the procurement of specialized medical materials (ŠZM) and pharmaceuticals is plagued by low efficiency, a distorted market environment, and even suspicions of unfair practices. Transparency International Slovakia (TIS) analyzed invoices from the twelve largest state hospitals between 2016 and 2021, totaling nearly EUR 3 billion. Of this amount, more than EUR 1.3 billion was spent on pharmaceuticals and ŠZM. According to TIS (2021), the ownership structure of several suppliers is unclear or even suspicious, and the conditions of certain tenders were non-transparent.

There is a lack of uniform tracking of pharmaceuticals and ŠZM consumption within state facilities. Where policies exist, they are often outdated, making it impossible to utilize the data for effective cost management. This was highlighted by a questionnaire survey conducted in selected state healthcare facilities in Q4 2023, with the following key findings:

- The method of recording the consumption of pharmaceuticals and ŠZM varies. Some facilities monitor the consumption of pharmaceuticals in individual units, while others monitor consumption in whole packages. For pharmaceuticals and ŠZM, monitoring ranges from consumption per patient to consumption for the entire department.
- The recording methodology showed significant diversity in the monitoring of the price of pharmaceutical and ŠZM consumption. Some state facilities keep records of consumption from minimum to maximum values. The price monitoring range varies from EUR 0.01 to the so-called "en bloc" price, which includes the total cost of the entire procedure or service package.
- White lists[29] are not used by all hospitals. Some hospitals even allow their employees a free choice of pharmaceuticals, which can lead to inefficient resource allocation and inconsistent cost-effectiveness management.

The internal organization of hospital processes and their management by the MoH is also a significant issue that requires substantial improvement. The TSI[30] project for UN BA[31] recommends improving controlling processes, introducing performance-based remuneration and KPIs, and monitoring procurement efficiency. Another TSI project, A comprehensive health system reform in Slovakia[32] , recommends the establishment of a shared services centre (SSC) for hospitals under the direct authority of the MoH with the aim of gradually centralising the agenda in areas such as human resources or economics and finance. The Recovery and Resilience Plan, Component 11, Reform 3, envisages the centralisation of the management of the largest state hospitals by 30 June 2025.

[27] Add-on items represent directly reimbursed pharmaceuticals and medical materials that are paid for separately, over and above the hospital stay or other procedure, in the amount the hospital paid for the product.

[28] UN BA, UN KE, UN MT, NUDCH, DN KE, DN BB, BB, TN, TT, PO, ZA, NR, NZ, data on the status of overdue liabilities from the third quarter of 2023.

[29] A white list is the opposite of a black list, i.e. a list of expressly prohibited goods and services. In general, the organisation trusts the goods and services on the white list, or finds them advantageous. Staff then use these goods and services as a priority for their work, depending on the rules of the specific organisation.

[30] TSI, or technical support instrument, is a technical assistance tool for EU Member States.

[31] Internal documents of the MoH SR from the TSI project "Analysis of Expenditures on State-Owned Projects".

[32] The complete analysis is available to the MoH SR as internal material.

Public hospitals do not utilize whitelists in their procurement to the same extent as private hospitals. These are lists of pre-tendered goods (pharmaceuticals and ŠZM) at contracted prices, which are intended to be used preferentially across hospital departments. Their counterparts are blacklists—lists of explicitly prohibited goods and services. Whitelists represent a potential tool for reducing costs on high-volume items (Box 15). Despite this, they are currently utilized primarily by private hospitals.[33]

Box 15: Good practice in the procurement management of pharmaceuticals and ŠZM

In business management, not only in hospitals, there are several effective tools for reducing the costs of items procured in large volumes. One of the fundamental tools is centralized procurement. In the past, one-off centralized procurements were carried out for items such as hospital beds, delivery beds, and similar equipment. However, a system for the regular procurement of specialized medical materials (ŠZM) and pharmaceuticals is lacking. **Whitelists and, to some extent, cashback systems also operate on the principle of economies of scale.**

Whitelists are lists of pre-tendered goods at agreed prices that are intended to be used preferentially across hospital departments. By placing goods or services on a whitelist, the organization indicates that they are advantageous. Staff then use them as a priority, depending on the rules of the specific organization. These lists are maintained to provide managers with a clear framework for selecting and using pharmaceuticals, with an emphasis on achieving targeted goals for generic substitution and cost-effectiveness. Whitelists are currently used mainly by private hospitals.

Hospitals can also benefit from so-called cashbacks, i.e. volume discounts from suppliers for bulk procurement over a certain period. Under such contracts, once the agreed contractual limit has been reached, part of the purchase price is refunded, or a credit is created for future procurement. This is beneficial for the hospital, provided that this tool is contractually defined and these funds are returned as hospital revenues.

However, the impact of cashbacks on the effective use of funds from the PHI is questionable. From the perspective of the health insurance company, especially in the case of additional items, it should be in its interest to capture at least a portion of this benefit. If the cashback mechanism is not officially recorded in published contracts, health insurance companies are unable to evaluate such cash flows and convert them into adjusted reimbursements.

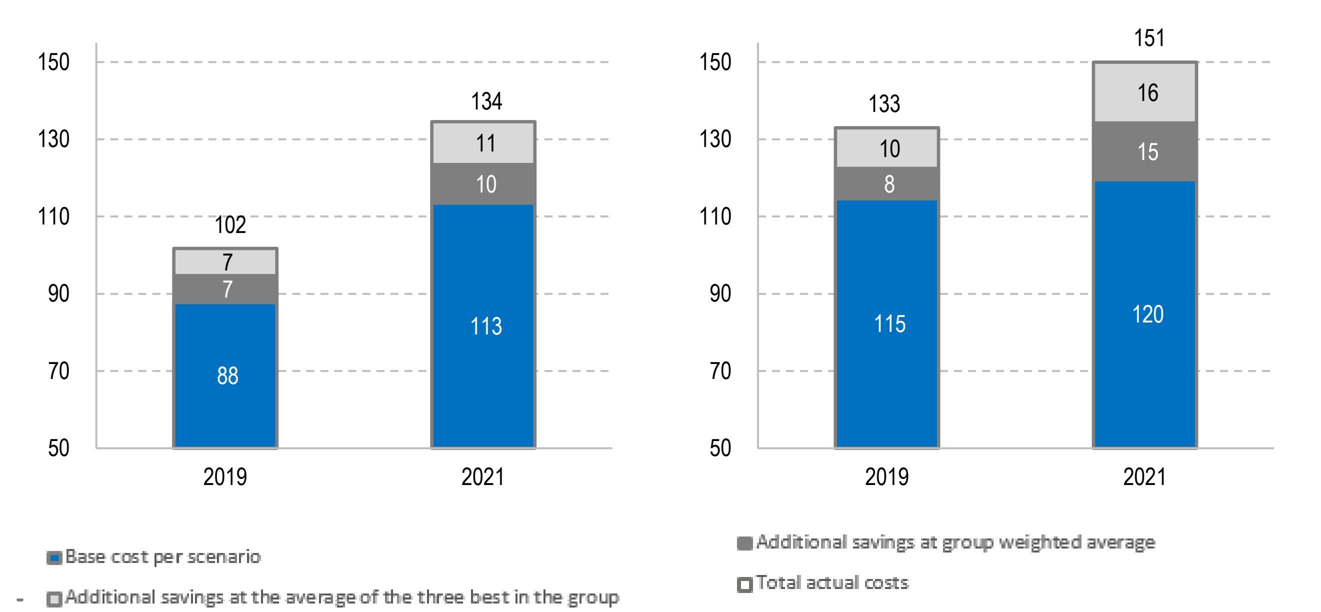
Insurance companies also utilize cashbacks through bonus schemes. The aim is to motivate providers to generate savings on pharmaceuticals administered on an outpatient basis (so-called "A-pharmaceuticals"), which are often expensive. These pharmaceuticals and ŠZM are reimbursed by the insurance company directly to the provider as an add-on item. If the provider's consumption falls compared to a reference period, the insurance company pays a contractually agreed amount. This motivates the provider to behave economically in areas where such motivation would otherwise be lacking.

The reliability of the buyer (the hospital) and its payment discipline also influence unit prices and other contractual conditions. Suppliers who anticipate poor payment discipline from their buyers usually factor the costs of financing future receivables, or securing their cash flow, into their offers. In the case of state hospitals, this is a chronic, long-term problem..

The ability to effectively manage consumption and costs for pharmaceuticals and ŠZM also depends to a large extent on sophisticated reporting and clear rules within the hospital. Financial costs should be monitored at least at the level of individual departments.

[33] Legislative changes would probably be necessary for their use in public hospitals.

Figure 35: Costs of pharmaceuticals and medical material and potential savings in HNO level III, IV and V hospitals, in EUR million



Source: MoH SR, IZA

Through more efficient procurement, large state hospitals[34] could save between EUR 15 million and EUR 52 million annually on pharmaceuticals and ŠZM alone. Figure 35 shows the cumulative costs of these hospitals for pharmaceuticals and ŠZM in 2019 and 2021 (the entire area of the figure in the dark grey frame, i.e., blue, dark grey, and light grey combined). The light grey section represents the costs that hospitals could save if those purchasing above the group average according to the HNO (Annex I) procured items at least at average group prices. The dark grey section represents the additional savings that would be achieved if all lower-performing hospitals procured at the average of the top three in the group.

A portion of these savings could be achieved by introducing the centralized procurement of pharmaceuticals and ŠZMs through a dynamic purchasing system. The currently prevailing individual procurement approach leads to fragmentation, resulting in higher pharmaceutical prices than if bulk procurement were utilized. Centralized procurement with a unified and coordinated strategy can lead to lower prices and optimized inventories.

The centralized procurement of medical equipment would save hospitals at least EUR 2.5 million per year[35]. The amount of potential savings depends on the quantity and type of equipment procured. In general, centralised procurement leads to savings of between 10% and 15% and is based on economies of scale, centralisation of human resources and know-how, and streamlining of processes through standardisation of procedures and elimination of duplication of activities. In Slovakia, public hospitals procure approximately EUR 13 million worth of large medical equipment (over EUR 500,000) annually from the state budget; together with smaller equipment, the total volume reaches EUR 19 million (in 2018-2022).[36]

Slovakia already has experience with bulk procurement of equipment, for example with CT scanners (in 2016), where it saved an estimated 30-40% of expenditure compared to the scenario of individual procurement by hospitals. In addition, the MoH SR also centrally procured hospital beds and linear accelerators with similarly declared savings. Centralised procurement in the form of central purchasing or framework agreements is also carried out abroad with estimated savings of 10-25% (e.g. Italy, Finland, UK).

[34] Level III hospitals: UN MT, NR, ZA, TN, TT, PO; Level IV hospitals: UN KE, BB, UN BA.

[35] Conservative estimate.

[36] The source volume of procured equipment, from which the amount of savings (10 to 15%) was calculated, was determined on the basis of data from the Public Procurement Office. CPV codes for common diagnostic and surgical equipment (CT, MR, USG, X-ray machines) were used. The most frequently used CPV codes (with the highest number of procurements) were included. The calculation therefore does not capture the complete volume procured.

Regardless of the introduction of centralized procurement, it is essential to establish a uniform cost-monitoring methodology. This represents a critical step for the effective planning, control, and optimization of costs within healthcare facilities. Currently, state facilities lack a standardized methodology, the implementation of which would offer several key advantages:

- **Transparency and comparability -** a uniform methodology enables the benchmarking of pharmaceutical costs, facilitating the identification of areas where efficiency improvements are required.
- **Preventing overconsumption** - standardized monitoring allows for the oversight and control of pharmaceutical utilization across hospitals, thereby preventing overconsumption and unnecessary expenditure.
- **Enhanced bargaining power with suppliers -** improved data availability places hospitals in a stronger position during negotiations with suppliers, potentially leading to lower prices and more favorable contract terms.
- **Improved quality of care - t**he effective management of pharmaceutical expenditures allows hospitals to reallocate funds toward enhancing the quality of patient care.

Streamlining the reference pricing process, particularly for ŠZM at the European level, would facilitate the evaluation and reduction of expenditures for Slovak hospitals. The challenge of limited reference pricing data, coupled with a high variance in prices for medical materials and devices, is a common issue across EU Member States. Consequently, the launch of a European medical device database[37] would be of significant benefit.

The introduction of white lists in line with good practice and consistent management and optimisation of stock levels can also contribute significantly to greater efficiency. Public hospitals should adopt effective tools to reduce the costs of items procured in bulk (Box 15). Procurements need to be monitored and evaluated so that they can be optimised over time.

Regarding pharmaceuticals, the introduction of robotic preparation and dispensing of pharmaceuticals can also contribute to greater effectiveness and clarity. Although such a move should primarily be seen as an investment in patient safety and relieving nurses of workload, it may also bring savings in the long term (lower complication and treatment error rates). More accurate recording and monitoring of pharmaceutical consumption per patient (e.g., by scanning the QR code on the patient's wristband) will contribute to a better overview of expenses.

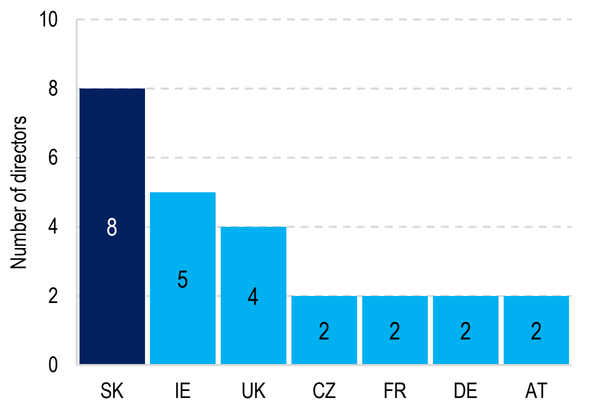
[37] The initiative to establish the European database of medical devices EUDAMED and the introduction of unique device identification numbers (UDI) arose as a result of problems with reference prices for medical devices and medical aids. Both would significantly simplify the process of referencing their prices. A very effective tool beyond the planned measures would be the introduction of a Europe-wide database of public health insurance reimbursements for medical devices in individual EU markets. Such a database would contribute significantly to the objectification of reimbursement setting in Slovakia as well, with a positive impact on public savings.

4 Absence of hospital management system and high management turnover deteriorate results and hinder development

The MoH does not have a hospital management system and the hospitals suffer from high management turnover. The problems are interlinked. Short leadership tenures reduce the willingness of hospital management to make decisions that are difficult but necessary in the long run, which worsens the outcomes. Consequently, poor outcomes justify frequent management changes by the MoH SR. For improvement, the responsibilities of the MoH SR (as the governing authority), supervisory boards and hospital management need to be clearly defined and divided, and the objectives of hospitals need to be publicly established and accounted for. The MoH SR should consider the transformation of teaching and university hospitals into joint stock companies, which would automatically ensure some of the necessary steps. The transformation itself does not have the potential to solve all problems, e.g. indebtedness. The improvement can be achieved regardless of the legal form of the hospitals.

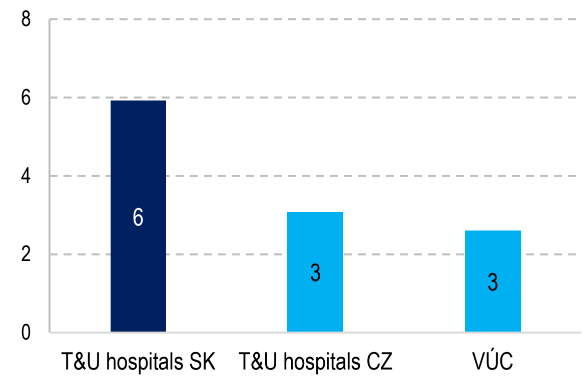
Staff turnover in the management of teaching and university hospitals is too high according to both domestic and international comparisons. In 12 years, there have been as many as 8 directors at UN BA, compared to only two at its Czech counterpart (the teaching hospital in Motol). Frequent management changes are symptomatic in all teaching and university hospitals of the MoH SR. Not only Czech teaching and university hospitals, but also Slovak hospitals administered by regional governments are much more stable in this respect.

Figure 36: Number of directors in the largest capital city hospitals between 2010–2022



Source: Annual reports of hospitals: Vienna General Hospital, Charité – Universitätsmedizin Berlin, Assistance Publique–Hôpitaux de Paris, Motol University Hospital, St George's University Hospitals NHS Foundation Trust, St James's Hospital, University Hospital BA, VfM

Figure 37: Number of directors in the largest state hospitals in the SR and CR and regional government hospitals between 2010–2022



Source: IZA and hospital annual reports: 10 regional hospitals in Slovakia, 13 teaching and university hospitals in Slovakia and the Czech Republic, VfM

Short tenure in office may reduce the willingness and ability of hospital management to engage in conflictual negotiations or launch long-term projects. More assertive negotiations with health insurance companies (Chapter 2), pressure to reduce personnel costs, renegotiation of collective agreements and negotiation of higher rents from private companies in hospital premises (Chapter 3) may cause short-term problems (non-contractual relationship with health insurance companies, employee strikes), but in the long term, these steps would significantly improve hospital management. However, from the perspective of management, who has been working in the hospital for less than two years on average, this may be a short-term problem, and by the time results improve, it is likely that the management will no longer be in office. Similarly, large construction projects necessary for the renovation of hospitals require several years of preparation and will not yield visible results for at least three years in the case of reconstruction.

A short tenure significantly reduces the chances of success in negotiations with insurance companies. Negotiating with health insurance companies is a key competence of hospital management. However, hospital directors had no opportunity to gain experience in such negotiations, which require knowledge of healthcare regulations, reimbursement mechanisms and the public health insurance budget. Negotiations between hospitals and insurance companies typically take place once a year. A two-year term in office means that management is replaced before it can gain repeated experience in negotiations.

4.1 High turnover can be reduced by greater transparency and a clearer definition of responsibilities.

Publicly defined and accountable objectives for hospitals would help stabilise hospital management. Publicly defined targets can increase the stability of hospital management, as they will clarify long-term priorities. The results of hospital management will be subject to public scrutiny, which will improve the position of managers with good results and also create the conditions for directors to be dismissed for legitimate reasons, if necessary.

Current selection procedures favour temporarily appointed directors, which, together with frequent dismissals without cause and clearly defined objectives, reduces the chance that the most capable candidates will apply for selection procedures. In 5 of the last 12 selection procedures in teaching and university hospitals, only the temporarily appointed director applied (Box 16).

Box 16: Selection procedures – Hospital directors

The selection procedure is often just a formality – usually only one candidate applies for the position. In most cases, it is the current, interim hospital director. The interim director is appointed by the MoH SR and is entrusted with management until a proper selection procedure is held, for a maximum period of six months.

Table 8: Overview of director selection procedures for teaching and university hospitals of the MoH SR

Hospital	Year of last selection procedure	Number of applicants	Temporary director
FN TT	2024	1	Yes
FN TN	2024	1	Yes
FN NZ	2024	6	
FN NR	2023	1	Yes
UN MT	2023	1	
UN KE	2022	2	Yes
UN BA	2022	1	Yes
FN ZA	2022	2	
DFN KE	2022	1	Yes
FN BB	2021	3	
DFN BB	2021	1	
FN PO	2020	2	

Note: Status as of August 2024. *Source: MoH SR, VfM*

The results of the selection procedure are published on the website of the MoH SR, however only the most recent ones are easily tracable. Selection procedures for the post of directors must be published on the ministry's website at least three weeks before they begin. The minutes of the selection procedures are not available. However, the composition of the selection board and the projects of the successful candidates or the scores of the candidates are published, together with the anonymised evaluation sheets of the selection board for each part of the selection process.

The qualification requirements are uniform for each organisation and have two fundamental problems. The first is the vague requirement for five years of professional experience, which does not define what kind of experience is required.

The second problem is the apparent preference for potential candidates from within the organisation, as it includes a strategic project for the development of the hospital. The objective is to define exactly how the future director will achieve, for example, balanced finances, increased effectiveness of expenses, or solutions to the current problems of the hospital. Given the very low availability of published data, such a task is significantly easier for people from the hospital setting.

Defining the objectives will help to distribute competences between the MoH SR as the governing authority of hospitals, hospital directors, and their supervisory boards. The division of competences is not clear today. For example, the limits for staff expenses are set by the PHI budget, but hospitals sign collective agreements and hire people above budget expectations without consulting the MoH SR.

Box 17: Division of competences between the MoH SR, hospital management and their supervisory boards

In an ideal world, the MoH SR exercises its competences as a governing authority , the equivalent of a parent company in a holding structure, i.e. in particular:

- Sets targets for individual hospitals in line with national health policy and investment priorities.
- Sets budgets and monitors adherence to them, especially in staff expenses.
- Coordinates negotiations with health insurance companies to ensure compliance with the adopted PHI budget and hospital plans.
- Monitors and continuously evaluates operational efficency for the setting of targets.
- Monitors the achievement of targets and initiates replacement at the job post of Hospital Director, if necessary. New management is selected through a selection procedure with predefined targets.

Hospital management is responsible for medical outcomes and operational efficiency and for implementing the objectives defined by the ministry, within existing financial, staff and legislative limits.

Supervisory boards check if the priorities of the managements correspond to the defined targets of the governing authority and that the achievement of the targets is correctly accounted for.

Transparency will be supported by clear and standardized annual reports of hospitals. Some hospitals publish clear annual reports, some not at all. The reports are not structured, making it impossible to easily compare hospitals in their effectiveness or in meeting common objectives (e.g. recruiting young healthcare professionals).

In addition to a basic overview of the hospital, the annual reports should also provide information on the activities of the management and supervisory boards, the remuneration of their members, changes in investment and strategic plans, or the main indicators of hospital quality. The reports of foreign hospitals usually report at least briefly on their management, performance, modernizations, as well as donations received. As with companies, the annual report could include a report by an independent external auditor.

Table 9: Annual reports of hospitals of the MoH SR and NHS hospitals

	NHS	UN BA	UN KE	UN MT	FN BB	FN NR	FN NZ	FN PO	FN TN	FN TT	FN ZA	DFN KE	DFN BB	NÚDCH
Publication	✓	✓	x	✓	✓	x	x	✓	x	✓	x	x	x	x
Outcome indicators	✓	✓	x	✓	✓	x	x	✓	x	✓	x	x	x	x
Wages	✓	✓*	x	✓	✓*	x	x	✓*	x	✓	x	x	x	x
Number of employees	✓	✓	x	✓	✓	x	x	✓	x	✓	x	x	x	x
Auditor's report	✓	x	x	x	x	x	x	x	x	x	x	x	x	x
Economic balance	✓	✓	x	✓	✓	x	x	✓	x	✓	x	x	x	x
Management and their remuneration	✓	x	x	x	✓**	x	x	x	x	x	x	x	x	x
Supervisory bodies and their remuneration	✓	x	x	x	✓**	x	x	x	x	x	x	x	x	x
Patient complaints	✓	✓	x	x	✓	x	x	✓	x	✓	x	x	x	x

** The data only includes information on the total wage costs for the entire hospital.*

*** Excluding data on bonuses.*

Source: Hospital annual reports, VfM

A well-structured annual report will help the MoH address current issues even without its direct involvement. Public pressure and the resulting self-regulation by management is one of the tools for ensuring the effectiveness of public institutions. Currently, the public has no way of finding out about potentially controversial issues, such as how and for what hospital management is remunerated, what percentage of doctors have side jobs, and how the hospital deals with possible conflicts of interest. Annual reports should include, in particular, information on:

- the number of beds, hospitalizations, case mix by insurance company and bed occupancy by individual medical programmes,
- contractual and actual revenues and hospitalizations broken down by health insurance companies,
- the number of employees by profession, their average salaries and FTE, as well as their age structure,
- hospital management, supervisory boards and their activities and remuneration in both bodies.

Box 18: Examples of good practice in disclosing information through hospital annual reports

The practice of providing publicly available and easily understandable information varies across countries. In several EU countries, hospitals are required to publish various data on performance, structure and financing. However, there is no uniform single European standard. Transparency is lacking not only in Slovakia, but also in other countries that joined the EU after 2004 (WHO; OECD, 2019).

Public hospitals in the United Kingdom that fall under the NHS Trust Fund are required by law to publish annual reports. Among other things, the law specifies what information the hospital is required to report. When writing their annual reports, hospitals must follow the NHS manual, which is updated annually. The annual report must contain at least two major categories, namely the Performance Report and the Accountability Report.

Among other things, the manual requires hospitals to disclose the salaries of senior management. If the annual income of any of its members exceeds GBP 150,000, justification is also required. Hospitals must also disclose the composition, activities and remuneration of their supervisory board members (Annex VI).

In Germany, hospitals must provide structural and performance data to the public. The data is in a standardised format (so-called *structured quality reports),* making it easier to compare across providers. Their publication is required by law and they are designed to provide detailed information about healthcare facilities to the public. They consist of three parts:

- hospital structure and performance data,
- data on the structure and performance of organisational units and specialised wards,
- quality assurance.

Most hospitals in the US must complete a detailed tax form about their financial flows. Similar to the UK, hospitals in the US are also required to disclose the remuneration of directors, board members and key hospital staff in the form. Annual reports here serve more as communication and promotional material for the hospital. However, because American hospitals are non-profit organisations, they are required to complete Form 990. This form contains all of the organisation's income and expenditures. Its purpose is to prevent tax-exempt organisations from abusing their status.

The Brno University Hospital provides very useful information to the Czech public. The 2015 annual report contains all the important information and is a good example, especially in the area on personnel and wage policy. It contains a time series of planned and actual wage costs, the number of employees, the development of overtime work and average wages broken down by profession, and the qualification structure of doctors (without certification, with certification – I, II, degree, etc.).

The annual reports of some Slovak hospitals are also good examples. FN BB publishes detailed information on inpatient care (Annex VI). Specifically, it provides information on the number of beds, hospitalizations, case mix and bed occupancy by ward, which can be used to determine which wards of the hospital are more or less busy and to what extent individual beds are occupied.

Revenues and hospitalizations broken down by individual health insurance companies allow for a comparison of revenues from health insurance companies, taking into account the number of hospitalizations or case mix. Examples include the University Hospital in Martin and St. Michael's Hospital (Appendix VI). Detailed information on revenues would also make it possible to check whether the hospital's production limit specified in the contract has been complied with, what was the volume of services recognised by the health insurance company and what services were actually paid for. Hospital in Kysuce publishes an informative annual report, particularly on its employees (Appendix VI).

Hospital in Kysuce publishes an informative annual report, particularly on its employees (Annex VI). Data on the number of employees, their average salary and age structure make it possible to compare the number of nurses and doctors of different ages working in individual hospitals and their average remuneration.

Information on the hospital's management and its supervisory board would show who is a member, whether they were elected or appointed and for how long, how and what for they are remunerated. It would also be possible to find out how many times a year they had a meeting, what the subject of the meeting was, and how many meetings each member attended. Some of the information (e.g. on the composition of the Supervisory Board and hospital management) is contained in the Annual Report of the Teaching Hospital with Policlinics in Banská Bystrica, but data on their meetings and remuneration are missing.

4.2 The MoH SR should consider transforming hospitals into joint-stock companies with strict budgetary rules

The teaching and university hospitals have the legal form of a semi-budgetary organisation. Although nothing prevents the MoH SR from centrally managing semi-budgetary organisations, the implementation of the hospital management system could be easier if they were joint-stock companies. The central/holding management of semi-budgetary organisations raises legal issues that would not be necessary to address in the case of joint-stock companies. The holding structure of joint-stock companies is a common practice

Currently, most large state hospitals have the legal form of a semi-budgetary organisation. The exceptions are specialised cardiac institutes, VOÚ and Poprad Hospital, which have been joint-stock companies since 2006 and are thus examples of the transformation of hospitals into joint-stock companies. The National Institute of Heart and Vascular Diseases, which underwent reconstruction between 2017 and 2021 with the addition of a new pavilion costing EUR 50 million, of which EUR 20 million was financed by a bank loan. Poprad Hospital has long been one of the leading state general hospitals and does not generate any losses; on the contrary, it has generated a profit of EUR 2 million over the last 10 years; or the Eastern Slovak Oncology Institute with a profit of EUR 1.0 to EUR 1.5 million per year. No healthcare provider has ceased to exist due to the change in legal form to a joint-stock company; on the contrary, they have improved their financial management, partly because they obtained better resources when they were established than they had previously.

The better financial results of hospitals with the legal form of joint-stock companies may also be due to the fact that they are formally younger organisations. At the time they were created or separated from hospitals (e.g. SÚSCH from FNsP FDR in Banská Bystrica), hey negotiated better conditions from health insurance companies than they had as semi-budgetary organisations. The improved performance in the following years could "only" have been the result of maintaining better conditions. On the other hand, hospitals that did not change their legal form managed to increase their initially inadequate funding only by indexation until 2024.

Box 19: The MoH SR can manage its semi-budgetary organisations

The legal personality of semi-budgetary organisations (SBO) does not mean that the governing authority lacks the power to interfere in their activities. Slovak legislation[38] provides a legitimate and sufficient legal basis for the establishment and subsequent management of a SBO by the MoH SR in its capacity as the governing authority. Under the current legislation, the governing authority has strong tools for managing a SBO It should be emphasised that the establishing authority decides whether to establish the organisation at all and, if so, what legal form it will take and what tasks it will perform, i.e. it defines its mission and the purpose of its establishment.

In the financial area, too, the governing authority has powerful management tools at its disposal, through which it directly influences and intervenes in financial areas and financial management, as well as in the organisation's activities, since the parent body establishes a SBO with the aim of fulfilling and ensuring, as a priority, the tasks it requires of it.

The administrator of the budget chapter, who is also the governing authority of the SBO:

[38] The legal basis for the exercise of the establishing authority's rights in relation to its semi-budgetary organisations is provided by the provisions of Act No. 523/2004 Coll. on public administration budgetary rules.

1. allocates the approved binding indicators of the chapter also for budgetary organisations and SBOs within its substantive jurisdiction[39] ;
2. makes it possible to decide, when allocating binding indicators for the relevant budget year, on the transfer of income from the transfer of administration or from the transfer of ownership of state property administered by a state SBO to the state budget revenue[40] ;
3. also directs the management of the budget funds of the chapter by having the obligation to determine the public expenditure limit of the SBO, as well as to ensure compliance with the public expenditure limit of the chapter[41] .

The governing authority also holds the power to appoint and dismiss the statutory body of the semi-budgetary organisation. The MoH SR, as the governing authority of the semi-budgetary organisation it establishes, is legitimately authorised to manage it. The establishing authority also issues a founding charter on the establishment of the SBO, which defines the scope of activities of the SBO, decides on the date of its establishment, as well as on the designation of the statutory body, and on the material and financial definition of the property entrusted to its administration upon establishment. The governing authority also specifies in the founding charter the period for which the public benefit organisation is established. The founding charter itself is therefore also a management tool, as the governing authority may, by deciding to amend it, change the scope of the SBO's activities or the period for which it is established during its operation. The establishing authority is obliged to dissolve the SBO if it fails to perform the tasks of the state for which it was established.

The legal provisions regarding the active management of its subordinate organisations are also enshrined in the MoH SR's own statutes, according to which it "manages and controls state budgetary organisations and state semi-budgetary organisations within its founding competence"[42].

A joint-stock company is a commercial company with clearly defined obligations and designated accountability for hospital performance. It operates according to the detailed legislation embedded in the Commercial Code (Act No. 513/1991 Coll., Sections 154 - 220gd), which creates pressure for the responsible preparation of business and financial plans and rigorous monthly reporting, enabling timely measures to be taken in the event of deficiencies in its financial management. The conditions for asset management allow joint-stock companies greater freedom; for example, they can lease premises in exchange for a share of the tenant's turnover. The publication of selected data in the Commercial Register and the mandatory publication of financial statements and other documents would significantly increase the transparency of financial management and simplify the comparison of the performance of individual hospitals.

Table 10: Comparison of the legal forms of joint-stock company and semi-budgetary organisation

	Semi-budgetary organisation	**Joint-stock company**
Legal regulation	Act 523/2004 Coll. § 21 - 28	Commercial Code (513/1991 Coll. § 154 – 220gd)
Ownership / scope	Single establishing authoritz	Possibility of multiple shareholders through a general meeting (e.g. MoF SR, MoE SR, VÚC, city, university, etc.)
Guarantee	Ad hoc debt relief	Reserve fund created upon establishment and mandatorily replenished from profits
Accounting	Double-entry, without audit and without disclosure	Mandatory audited financial statements*, published
Management	According to the governing authority's decision, typically 1 director	3-member board of directors
Supervisory	According to the governing authority's decision , supervisory body without disclosure of members	Mandatory supervisory board with powers pursuant to 513/1991 Coll. § 197 – 201, members disclosed
Debt creation	Moral hazard of repeated debt relief by the parent body and multi-year accumulation of debt	Ability to incur losses only up to the amount of the reserve fund and the need to address debt during the year
Bankruptcy	It is not possible to declare bankruptcy on assets	Possibility to file for bankruptcy
Investment financing	Capital contributions from the MoH SR within the public administration budget	Share issue, commercial credit line, profits from previous periods
Additional operational financing	Contribution from the MoH SR	Increase in share capital (risk of state aid), commercial credit line

[39] Pursuant to Section 9(4)(f) of Act No. 523/2004 Coll.
[40] Pursuant to Section 24(1) of Act No. 523/2004 Coll.
[41] Pursuant to Section 9(4)(i) of Act No. 523/2004 Coll.
[42] Article 9(2)(a)(1).

	Semi-budgetary organisation	Joint-stock company

** The audit obligation is conditional upon meeting the statutory size criteria in accordance with the Accounting Act 431/2002 Coll., § 19, paragraph 1, letter a), which all Slovak hospitals meet.*

Source: VfM

Joint-stock companies would allow shared ownership among several institutions such as the MoH SR, the MoF SR / MoH SR and higher territorial units, or specific medical faculties, which would contribute to more active cooperation of key stakeholders, greater oversight, but also to greater stability in the management and vision of these hospitals. In the transition period, it would be possible to allow the institutions to nominate their representatives to the supervisory bodies of the semi-budgetary organisations.

A good practice from abroad is to concentrate the ownership of the MoH SR in a holding company, which, in addition to equity participation, will also implement the project Centralisation of Management and Central Procurement of State Hospitals, be responsible for investments in the regular renewal of assets (construction and reconstruction of healthcare infrastructure) and carry out central (holding) management of hospitals. The procurement of homogeneous goods and services should be carried out centrally in order to achieve economies of scale and minimise the risk of unfair practices in procurement. Employment contracts and collective agreements should not create significant inequalities between hospitals in the holding company and should be coordinated at this level.

The concept of holding ownership and management of public hospitals is also widespread in the Czech Republic, for example, where regional hospital holdings bringing together public hospitals in a given region are common practice. Krajská zdravotní, a.s. brings together seven hospitals in the Ústí nad Labem Region, and Jihočeské nemocnice, a.s. brings together eight hospitals in the South Bohemian Region, including Nemocnice České Budějovice, a.s., which, with 1,473 beds, is one of the largest hospitals in the Czech Republic.

However, changing the legal form alone does not have the potential to solve the biggest problems facing Slovak hospitals, such as their continuous indebtedness and insufficient management. Legal form is only a partial component of the changes needed to improve the management of state-owned hospitals. These changes could largely be implemented even now, when hospitals are predominantly semi-budgetary organisations under the MoH SR (Box 19). The practical frameworks of corporate governance of state-owned organisations in the areas of transparency, management selection, performance measurement or control environment are described in studies by the OECD (2015) and the WB (2014).

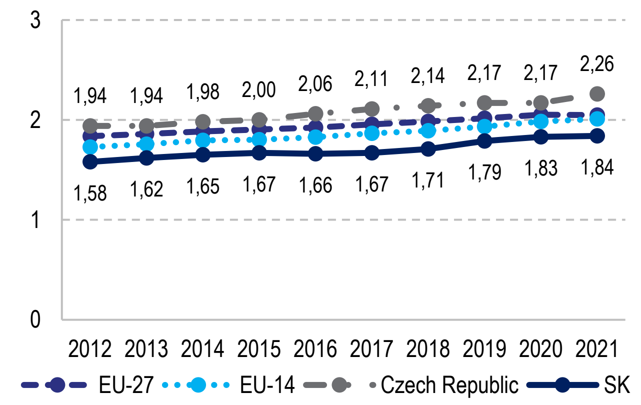
The transformation of state hospitals was rejected by the Medical Trade Union (LOZ) at the end of 2024 and was one of the key conditions of the LOZ for the withdrawal of the doctors' notices of resignation in hospitals. Based on this, the Government of the SR adopted Government Resolution No. 754/2024, in which it declares that during the term of office of the current government there will be no transformation of inpatient healthcare facilities within the founding jurisdiction of the MoH into joint-stock companies under the Commercial Code.

5 The shortage of staff cannot be solved by Slovak universities alone

Slovakia has a shortage of healthcare personnel, especially nurses. The increasing workload of nurses, combined with their gradual retirement and the ageing population, will exacerbate this problem. It is therefore necessary to increase the attractiveness of the nursing profession, in particular by redistributing responsibilities between nurses and practical nurses and reducing their administrative burden. Increasing the attractiveness of the profession will also help to increase interest in studying nursing. However, without workers from abroad, it will not be possible to completely solve the shortage. In addition to recruiting and retaining staff, it is also necessary to reduce the demand for inpatient care by shortening hospital stays, strengthening outpatient care and improving patient triage.

Slovak healthcare is facing a shortage of staff. International comparisons are complicated due to differences in competences and reporting. If they were the same as in developed countries, there would be a shortage of 14,000 nurses[1] and 1,200 doctors (VfM, 2019)[43] across the entire system. Taking into account the needs and current minimum standards, according to the MoH, Slovakia is short of at least 4,600 nurses and 3,350 doctors[44] . The shortage of personnel also has a negative impact on the results achieved in healthcare (Philip et al. 2021). Across the healthcare sector as a whole, there are approximately 1.6 nurses per doctor, compared to an OECD average of 2.7 and almost 4 nurses in several countries with very good results. However, such comparisons are complicated due to differences in the activities that doctors and nurses can perform; for example, in Austria and Poland, nurses prescribe certain types of medication.

Figure 38: Number of doctors in hospitals (FTE per thousand inhabitants)

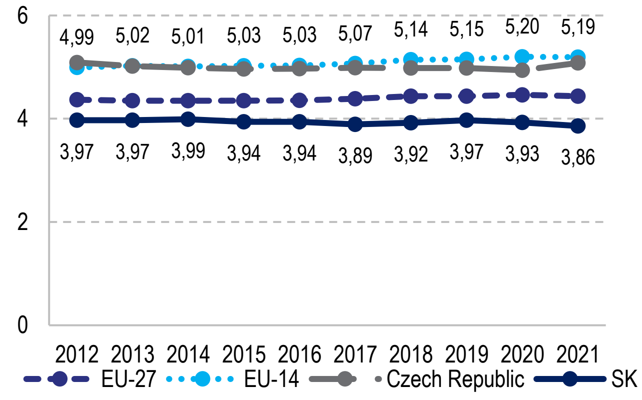


Note: EU-14: excluding Finland, Greece, Italy, Luxembourg, Portugal, Spain and Sweden

EU-27: excluding Bulgaria, Croatia, Cyprus, Finland, Greece, Italy, Latvia, Luxembourg, Malta, Poland, Portugal, Slovenia, Spain and Sweden

Source: OECD, IZA

Figure 39: Number of nurses working in hospitals (FTE per thousand inhabitants)



Note: EU-14: excluding Finland, Greece, Italy, Luxembourg, Portugal, Spain and Sweden

EU-27: excluding Bulgaria, Croatia, Cyprus, Finland, Greece, Italy, Latvia, Luxembourg, Malta, Poland, Portugal, Slovenia, Spain and Sweden

Source: OECD, IZA

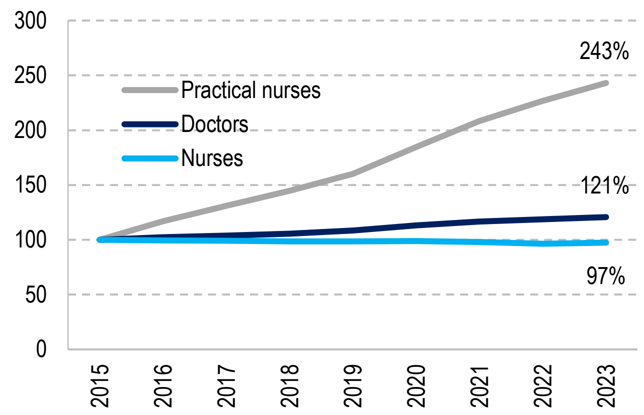
Nurses have long been the biggest problem in Slovak hospitals. There is a shortage of between 3,100 (EU-27) and 7,200 (EU-14) nurses compared to the gross European average, and 2,605 (12% of the required number) **compared to Slovakia's minimum standards**[45] . The number of nurses in hospitals is declining slightly, and thanks to the growing number of doctors, which is not very different from other countries (Figure 38), their ratio per doctor is falling significantly. Although the number of practical nurses has been increasing in recent years , this does not solve the overall problem under the current system. A practical nurse cannot fully replace a registered nurse (see Box 20 in Section 5.1 for more details).

[43] Estimate based on data from 2016.

[44] Based on the results of direct data collection.

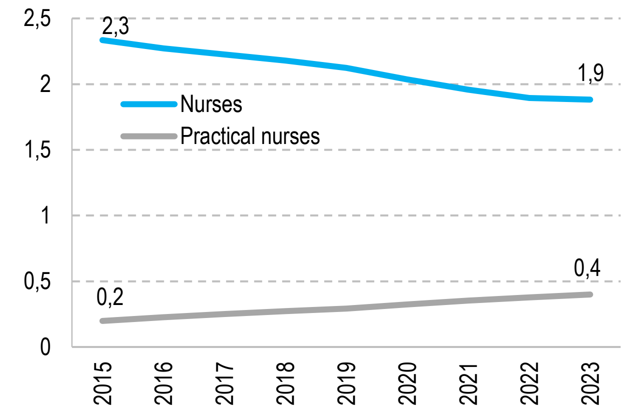
[45] Minimum standards are created by combining two norms. From Decree 316/2022, which defines the minimum number of staff according to a specific UN programme, and Decree 09812/2008-OL, which sets the minimum number of FTEs per bed patient. For example, if a hospital meets the conditions of the UN cardiac surgery programme, which is mandatory for level IV and V hospitals (minimum of 4 cardiac surgeons), but according to the number of patients in the department, 2 are missing, the hospital will report 2 missing. The same applies in reverse: if a hospital has a sufficient number of cardiac surgeons according to the number of inpatients, but is short of the number required by the UN programme requirements, it will report them as missing. The calculation is made in accordance with the legislation in force in 2023.

Figure 40: Development of FTE for selected professions in 13 teaching and university hospitals, in %



Source: NCZI, VfM

Figure 41: Number of nurses and practical nurses per doctor in 13 teaching and university hospitals



Source: NCZI, VfM

Without change, nurses will age and their gradual retirement will further exacerbate the shortage (Annex I). While in 2011 almost half of nurses were younger than 40, in 2021 less than a quarter were. The number of nurses over the age of 60 has almost tripled over the same period. Their gradual retirement cannot be compensated for without changes to the current intake of new nurses and increased retention in healthcare. The first large departures can be expected in 2029, and will be even more noticeable after 2035 (RRZ, 2023). Unlike doctors, nurses cannot be expected to continue working after reaching retirement age.[46]

The deepening shortage of nurses will further increase the workload of the remaining nurses, which increases the risk of further departures. The BCG study[47] estimates that the number of hospitalizations in the Bratislava region will increase by 46% by 2050, which, without further changes, will create an unsustainable burden on nurses (see Annex VII for more details).

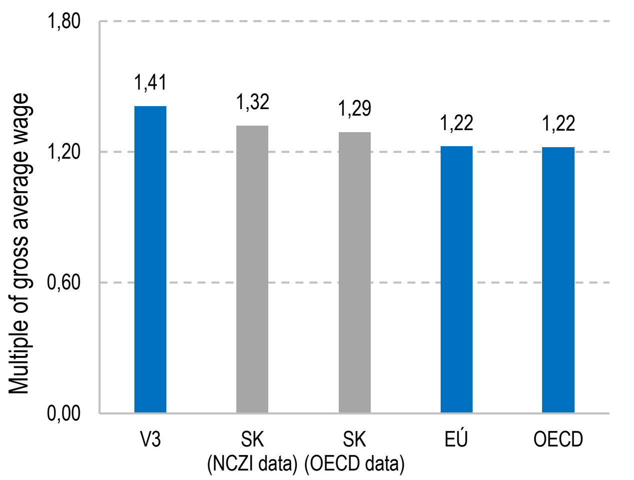
5.1 Nurse retention needs to be increased by improving working conditions

Despite rising average salaries, the attractiveness of the nursing profession in hospitals has not increased. According to the OECD, the average wages of nurses working in all hospitals reached 1.3 times the average wages in the economy in 2021, and almost 1.5 times in 13 teaching and university hospitals. The salary of nurses in tertiary hospitals thus increased from EUR 1,047 in 2015 to EUR 2,093 in 2023 (an increase of 100%), while average wages rose from EUR 883 to EUR 1,433 (an increase of 62.3%) over the same period. There is no room for further sharp increases in public spending. However, remuneration may not be the only reason for the continuing low attractiveness of the profession.

[46] Practical nurses do not face similar challenges. Their age structure is significantly better. A more detailed comparison is provided in Annex I.

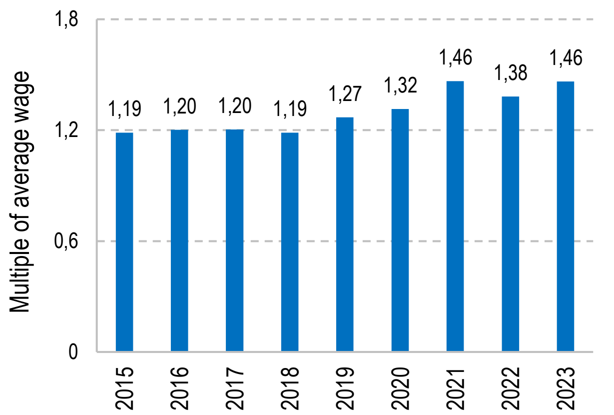
[47] The study assumes that the population of the BSK will increase by 25% between 2019 and 2050 (to approximately 830,000 people), the proportion of people aged 65+ will increase to almost 26% (17% in 2019) and the proportion of this age group among 15- to 64-year-olds will increase to 44% (26% in 2019).

Figure 42: Hospital nurses' salaries[48] in relation to the average wage in the economy, 2021



Source: OECD, NCZI, VfM

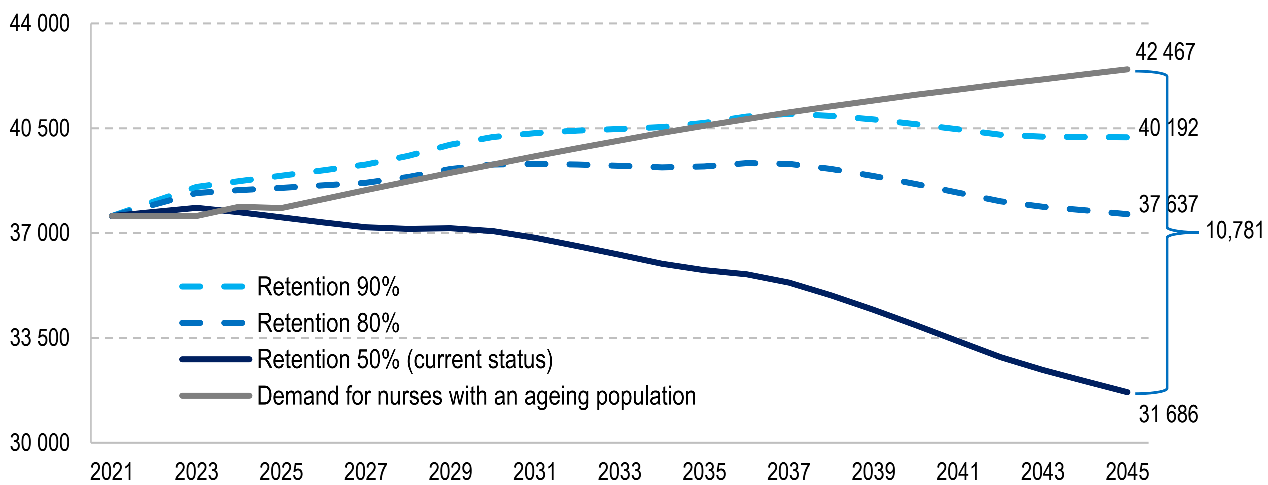
Figure 43: Development of average nurses' salaries[49] in 13 teaching and university hospitals



Source: NCZI, ŠÚSR, VfM

A consequence of the lack of attractiveness is the declining interest in study and low retention of nursing graduates. Despite pay rises, the number of nursing graduates has fallen by more than half in the last 10 years. Moreover, 50 % of them will not even join the health care system for longer than 5 years (RRZ, 2023)[50] . It is crucial not only to increase the number of graduates, but also to retain them in the system.

Figure 44: Estimated development of the number of nurses depending on the retention rate*



** Note: The demand for nurses is based on a scenario of unchanged policies, demographic and macroeconomic forecasts, and maintaining the current ratio of nurses to doctors.*

Source: RRZ (2023), VfM

The main obstacles are the demanding nature of the profession, the workload resulting from staff shortages and poorer career development opportunities (Tupá, 2020). The work of a nurse is physically and emotionally demanding. Staff shortages mean that nurses in hospitals experience significantly more work-related stress than those in other facilities or social services. Young people in particular may also be discouraged by inadequate training opportunities and poorer career development prospects.

[48] The SK column shows the average salary of nurses in 13 teaching and university hospitals according to the NCZI, while the other data are from the OECD. The EU average is made up of Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Greece, the Netherlands, Ireland, Luxembourg, Hungary, Norway, Poland (2020), Portugal, Slovakia, Slovenia, Spain, Sweden and Italy. The OECD average does not include Australia, Japan, Korea, Costa Rica, Lithuania, Latvia, Germany and Turkey. In the V4 countries, the missing data for Poland in 2021 is replaced by the 2020 data.

[49] The average wage in Figure 43 is from the SUSR. It is also referred to in the legislation regulating tariff wages in healthcare. This average wage is lower than that used by the OECD (Figure 42).

[50] The RRZ study (2023) uses the term nurse+, which includes all professions of nurses, midwives, practical nurses – assistants and healthcare assistants.

Changes in nurses' competencies and their lower administrative burden have the potential to increase the attractiveness of the profession. Nurses today also perform tasks that they should not have to do, particularly administrative tasks. Given the significant shortage of nurses, some of their responsibilities should be taken over by practical nurses (whose numbers are growing in Slovakia) and administrative work should be taken over by support professions.

Box 20: Possible expansion of the scope of practice of nurses and practical nurses

The Slovak system distinguishes between nurses (including midwives) and practical nurses. The difference lies in what each profession can (or cannot) do, which also results from different minimum educational requirements. For a practical nurse (formerly a medical assistant), a completed secondary medical education in the field is sufficient. Nurses need to have a university degree or secondary education with additional training. This is then reflected in the greater responsibility and autonomy of nurses' work.

The transfer of competences would enable practical nurses to perform a wider range of nursing activities and would lighten the workload of nurses. In practice, due to a widespread staff shortages, medical and non-medical workers often have to perform activities outside their areas of responsibility. In some cases, nurses may do the work of non-medical staff, while in other cases, practical nurses or orderlies already have to carry out activities that fall within the remit of nurses. To strengthen capacities, responsibilities should therefore be delegated to the lower-level staff where possible. The MoH SR has prepared a proposal for changes to competences, but this was rejected in its entirety by the Association of Secondary Medical Schools during the inter-ministerial consultation process.

Table 11: Possible transfer of competences from higher to lower healthcare professions

From nurses to practical nurses	*From practical nurses to orderlies*
Beyond their current competences, they could provide and perform activities related to the admission, discharge, transfer, dying and death of patients. They could assess and monitor the health status of patients using assessment and measurement tools. Furthermore, they could apply wraps, compresses, oxygen and inhalation therapy, enteral nutrition or enemas. Other activities include suctioning secretions from the upper and lower respiratory tract, stoma care, performing basic resuscitation and administering parenteral nutrition.	Beyond current duties, they could inform patients about hygiene rules, ensure environmental hygiene, and disinfect medical devices, equipment, and instruments. They would check the temperature in rooms and pharmaceutical refrigerators. Other tasks include receiving, storing, and checking medical devices and materials, preparing dressing materials, and bed-making and linen care. They would ensure a safe environment and patient privacy, train patients in self-care activities, position them, provide food and fluids, and perform hygiene care. Finally, they would assist in diagnostic and therapeutic procedures and participate in post-mortem care

Redistributing some of the tasks in the healthcare team to non-medical staff could improve the quality of patient care. Although carers are not healthcare professionals, it is necessary to consider transferring some of the tasks from orderlies to them in order to free up capacity. This could include, for example, basic disinfection and hygiene care of equipment and the environment, preparation of medical equipment for sterilisation, care of beds and linen, transport of patients for examinations and biological material to laboratories. Carers could also deliver meals to wards, assist patients with eating and drinking, and perform certain hygiene tasks.

A reasonable expansion of the scope of practice could also help to make the nursing profession more attractive. In countries such as Austria and Poland, nurses are allowed to prescribe certain groups of pharmaceuticals. There have been lengthy discussions about strengthening the powers of midwives during the prenatal period and during physiological deliveries (TASR, 2017). However, it appears that established practices are difficult to change and that simply adjusting competences in decrees or legislation may not be enough. In practice, there are differences in the extent to which midwives' existing competences are applied across hospitals that are already entrusted with physiological deliveries. In the majority of hospitals, their involvement is minimal, and even physiological deliveries are almost exclusively conducted by doctors. One reason for this may be that staff have lost the skills they acquired during their studies and training. On the other hand, there is a lack of sufficient financial motivation in the form of payments from HICs for the wider application of prenatal competences (e.g. in the form of home visits and birth preparation).

5.2 Healthcare personnel must also be attracted from abroad

Slovak healthcare also needs workers from abroad. The main obstacles to employing people from outside the EU are the complexity and length of the permitting process, the cost of recognition of education and qualifications, and the language barrier. The greatest room for improvement lies in simplifying the process of obtaining work visas, speeding up the recognition of professional qualifications, supporting language training and integrating workers and their families more effectively.

The focus should not be solely on nurses and doctors; other healthcare professions would also be helpful. Orderlies and practical nurses have lower training requirements and can significantly lighten the workload of doctors and nurses. An alternative is to train auxiliary non-medical staff who would be useful in basic interactions with patients, such as changing bed linen, serving meals, washing, etc. The training period for non-medical staff is a matter of months, as opposed to years of training for medical staff.

Lower-skilled staff are easier to retain in Slovakia. Doctors and nurses have the same educational and professional requirements in all EU countries. This gives them easy access to neighbouring countries in terms of professional qualifications. This does not apply to orderlies and practical nurses, whose professions are not regulated at European level. It is therefore easier to retain them in practice. At the same time, it would be possible to support them in further education and thus gradually reduce the shortage of some qualified healthcare workers.

It is necessary to simplify the employment of third-country nationals who wish to work in healthcare. The MoH SR has presented a proposal for measures aimed at supporting and streamlining the process of their employment in Slovakia. An action plan for coordinating the employment of third-country nationals was submitted for discussion to a working group of the same name with the aim of focusing specifically on third countries. The target group of the action plan is not only healthcare personnel; there is also potential in less skilled auxiliary professions. The measures may vary depending on the type of staff. For medical staff, the current process from application for entry to recognition of education and qualifications is not only time-consuming but also costly. The recognition of education from non-European countries alone can take two years and cost the applicant up to EUR 2,500.

Appropriately designed support and incentives can significantly help to make the Slovak labour market more attractive. Tools such as support for recruitment activities abroad, systematic language and vocational training, sufficiently rapid integration of workers and their family members, assistance with housing and life situations, and temporary tax relief for earnings from dependent work in healthcare facilities.

6 Modern hospitals will not be possible without better planning

Hospital buildings are 50 years old on average and often do not meet current medical requirements. The investment backlog of all hospitals under the MoH SR, amounting to EUR 4.5 billion to EUR 7.1 billion, is the result of long-term neglect of investment and infrastructure maintenance. To reduce this backlog, it will be necessary to improve investment planning, draw on EU resources more effectively and ensure that hospitals cover maintenance costs from adequately increased revenues from PHI. Investments in the form of PPP projects should be seen primarily as a tool for increasing efficiency. However, without sufficient experience, they are risky for the state.

The average age of state hospital buildings is 50 years, and many hospitals have inadequate layouts and capacities. Despite this, no significant investments have been made in recent decades. Only one new state hospital has been built in the last 30 years (St. Michael's Hospital in Bratislava, opened in 2015) and not a single one has been completely renovated. Public tenders for the comprehensive reconstruction of the F.D. Roosevelt Teaching Hospital and Polyclinic in Banská Bystrica (2019) and the University Hospital Bratislava Ružinov (2020) were cancelled before the contract was signed. According to the passportisation[51] of buildings owned by the MoH SR, up to 83% of hospital space is not insulated or is insufficiently insulated. The necessary investments in hospitals are usually only partially addressed by the state, depending on the available finances.

Most current hospitals do not meet current healthcare requirements and have an oversized bed capacity that could be used more efficiently. Slovak hospitals have 33% more beds per 1,000 inhabitants than the OECD average[52] and achieve a low bed occupancy rate[53] (see the chapter1.2 for more information). The consequences of oversized bed capacity can be inefficient use of space, excess floor space and additional costs (e.g. energy, maintenance, modernisation). Hospital spaces are often unsuitable in terms of layout and do not meet current healthcare requirements (e.g. fewer beds per room, en-suite bathrooms, spaces for day-care centres and day-care). Renovations will not solve all these problems, and therefore the construction of new hospitals will be an essential part of modernisation (more in Box 21)[54] . When building hospitals, it is necessary to ensure the optimal number of beds and occupancy rate of the hospital. At the same time, it is also necessary to consider redirecting part of inpatient care to primary, follow-up or one-day care.

Box 21: Choosing good hospital architecture is key to economic efficiency and improving patient care

In recent years, the project intents of several hospitals have been evaluated, highlighting their inappropriate layout and the resulting problems. For example, older hospitals commonly have a pavilion layout, which is now considered a source of inefficiency, mainly due to the need to move patients, materials and staff between several buildings. Frequent and lengthy patient transfers are not in line with new approaches to hospital design and care. In addition to the internal layout of the hospital, the transfer of patients on beds through the external environment is also a problem. Some of the pavilion hospitals have connecting corridors, but these are often in a state of disrepair and cannot be used. Another problem is rooms with three or more beds and shared sanitary facilities.

The design of hospitals and the resulting patient management is also important because of its impact on patients' stress levels, which can affect their health. Modern hospitals are moving away from clearly separated specialisations and instead are moving towards integrating them in order to focus care around the patient. The integration of specialisations allows for the sharing of beds, which in turn can increase the bed occupancy rate of the hospital.

The choice of the appropriate approach, renovation or construction of a new hospital, is related to the medical programme designed for a given level of hospital within the Hospital Network Optimisation programme. When constructing a new facility, it is first necessary to define the appropriate form and shape of the building, which is based on

[51] Mapping the existing state of buildings.

[52] The need for beds is also determined by the system settings, specifically whether and how primary and follow-up care works and to what extent hospitals are able to use one-day care and day care centres.

[53] The number of beds per room affects bed utilisation, which is not taken into account in the OECD statistics. Multi-bed rooms typically have lower occupancy rates, as their full capacity cannot be utilised if the patient's condition does not allow it. However, single rooms also have some disadvantages (more difficult patient monitoring, higher initial costs, etc.). New hospital projects often use a combination of single and double rooms.

[54] Hospital premises may also become redundant due to staff shortages, leading to the closure or reduction of departments. It is unclear whether such beds are reported in NCZI statistics and subsequently affect the reported efficiency of the hospital. More flexible use and increased utilisation of beds can be ensured by a system of shared (floating) beds.

the requirements of the programme and should be the basis for creating the assignment for the procurement of project documentation.

Specialised higher-level facilities place great emphasis on efficient patient pathways and interconnection between departments. In tertiary-type facilities, i.e. level III and higher, which provide specialised comprehensive services and a multidisciplinary approach to the diagnosis and treatment of diseases, the emphasis is on ensuring the efficiency of patient pathway and good connections between individual departments in order to concentrate care. In this case, the ideal solution is a so-called block-type hospital, which also appears to be effective in terms of sustainability requirements. The block type (or the so-called podium and tower type) ensures the smooth transfer of patients and connections within the hospital, and is also effective in terms of land availability and usability, which is currently proving to be a problem, especially in larger cities.

Lower-level hospitals focus primarily on creating a suitable environment for follow-up care and rehabilitation close to the patient's home. Level I hospitals focus on day-care and follow-up care, i.e. on creating an environment for the patient's follow-up care and rehabilitation that is closer to their home and loved ones. These are hospitals in smaller towns that have sufficient space to build so-called atrium-type hospitals. Atriums create enclosed micro-courtyards with a more pleasant atmosphere, better daylighting and contact with greenery. This spatial arrangement has a long-term effect on improving the quality of healthcare and speeding up the patient's recovery process. Healthcare in Level II hospitals will be more diverse, and their buildings will need to be assessed individually according to their programmes.

The concept of a healing environment is part of the approach to building new patient-oriented hospital facilities. The main objective of this approach, known as the "healing environment", is to reduce stress and its physical manifestations and the problems that arise from it, such as medical errors and inability to concentrate, and to promote faster patient recovery by shaping the physical and social environment of the hospital. The application of this concept not only benefits patients and their families, but also ensures the creation of quality working conditions for healthcare staff. At the same time, existing studies have shown that faster patient recovery can be achieved in a hospital environment, thus shortening the length of hospital stay, if the physical aspects of the hospital, such as views of greenery, patient privacy, materials used, or daylight or artificial lighting implemented in accordance with the healing environment concept. Ultimately, the application of the healing environment concept also has a positive impact on the economic efficiency of hospital facilities.

In 2013, the MoH SR estimated the investment backlog across the entire network of healthcare providers at EUR 3.9 billion. Using the current costs of hospital construction and equipment, this would amount to EUR 4.8 billion, but this estimate is probably underestimated (Box 22). The MoH calculated the investment backlog based on the number of beds required, space per bed and unit cost of hospital construction. HPI (2014) used a similar method, but with adjusted parameters, to estimate the backlog across the entire network at between EUR 4.2 and EUR 8.9 billion. HPI works with different requirements for beds and bed space and unit construction costs.

According to the MoF, the investment backlog of public hospitals alone ranges from EUR 4.5 to EUR 7.1 billion, depending on the number of hospitalizations, the average length of stay and the bed occupancy rate of new hospitals. Similar to the HPI and the MoH, the MoF calculation is based on the number of beds and space requirements, but it includes lower hospital efficiency and lower space requirements in the range. Beds in acute wards of public hospitals were included. The estimate is conservative, as it expects new projects to emphasise hospital efficiency and optimise bed capacity**.** The investment backlog also includes the expected costs for the renewal of medical equipment. A more detailed calculation procedure is provided in Box 22. The construction of all beds is unlikely in practice and would probably not be necessary in all cases, but would depend on the condition of the buildings. If all public hospitals were only renovated while retaining the current bed capacity (22,000), the costs would be EUR 6.7 billion.[55] The poor condition of public hospitals is also illustrated by a comparison with private hospitals or by the difference in investment activity compared to the Czech Republic, see Annex VIII.

[55] At a unit cost per bed of EUR 308,374, taken from the 2023 Plan revision.

Box 22: Investment backlog calculation according to the MoF SR

In its calculation of investment backlog, the MoH SR uses parameters that may lead to an underestimation of investment backlog. The beds required in the MoH's calculation did not include psychiatric beds and beds for long-term care, as the average length of hospital stay used in the calculation is significantly longer in these departments. The investment backlog may therefore be underestimated in this calculation. At the same time, the number of hospitalizations in the MoH's calculation was adjusted to OECD targets – hospitalizations were to fall by 20%, the average length of stay to 5 days and bed occupancy rate to 85%. This is an optimistic scenario, and the necessary investment would be higher if hospitals do not achieve the expected efficiency and are therefore unable to reduce the number of beds (and the associated hospital space required).

The MoF SR calculation calculates the investment backlog also through the necessary beds, but the range also considers lower hospital efficiency or higher space requirements. The MoF SR calculation includes two variants representing the range from the minimum to the maximum necessary investment, taking into account only public hospitals. The variant with the minimum investment assumes higher hospital efficiency and a longer lifespan of the buildings. The variant with the maximum investment was calculated based on a more conservative estimate of the efficiency of the care provided. The bed occupancy rate assumption was reduced to 80%, but this is still an optimistic estimate that assumes an increase in hospital efficiency (currently achieving an average bed occupancy rate of 56%). The investment costs were calculated based on data from the concluded contract for the construction of a new hospital in Banská Bystrica (unit construction costs per m²), which were increased by the estimated additional costs. The project of the new University Hospital in Martin was not used due to the higher unit costs of the project, which resulted from above-standard construction elements and the type of hospital (university), which is not representative of the other hospitals. The actual investment requirement may be lower due to the simpler construction of lower-level hospitals and the likely reconstruction of some buildings instead of new construction.

Table 12: Calculation of the necessary annual investment and total investment backlog*

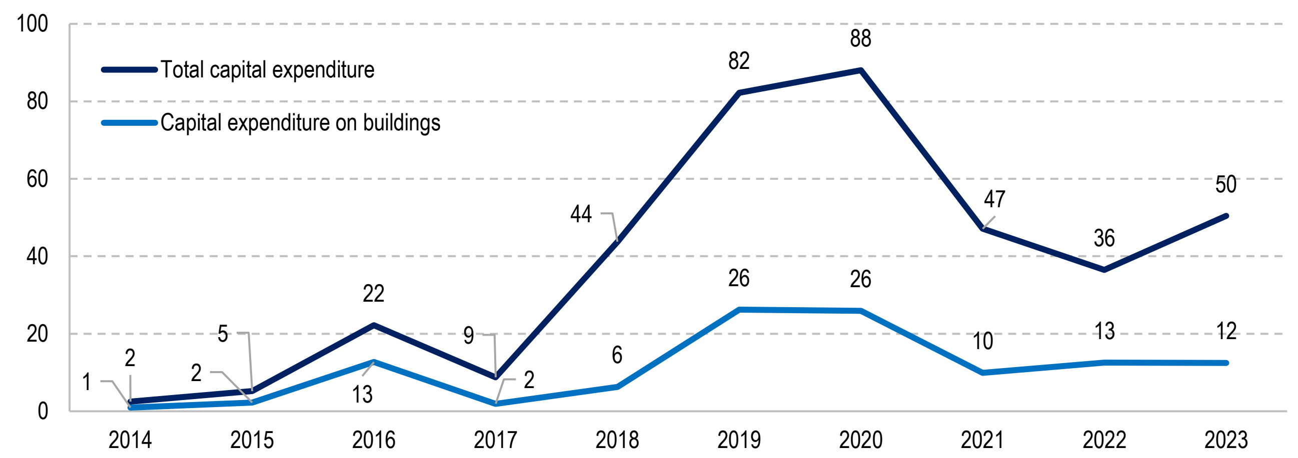
	MOH SR	MoF SR calculation min	MoF SR max. recalculation
Annual number of hospitalizations	789 658	674 671	674 671
Target occupancy rate	85 %	85 %	80 %
Target average length of hospitalization (days)	5	5	6
Number of beds required	12 726	10 873	13 863
Number of m²per bed	128	128	158
Total space requirement	1 628 948	1 391 747	2 186 315
Amount per m²	2 596	2 596	2 596
Amount per m² including technical equipment and furniture	3 245	3 245	3 245
Hospital lifespan	35	40	35
Average annual investment (EUR million excluding VAT)	**137 ,6**	**90**	**162**
Investment requirement for construction (EUR billion excluding VAT)	3 ,9	3 ,6	5 ,7
Total investment requirement (EUR billion excluding VAT)	**4 ,8**	**4 ,5**	**7 ,1**

**The benchmark is the hospital construction project in Banská Bystrica, increased by expected additional costs.* *Source: VfM*

6.1 Better use of available resources is needed for the gradual renovation of hospitals

Investments from the state budget in public hospitals averaged EUR 60 million per year between 2019 and 2023, of which EUR 17 million was spent on buildings. Reducing the investment backlog to the level of private hospitals within 20 years would require, in addition to maintenance investments, the modernisation of buildings at a rate of at least EUR 78 million per year. Hospitals' revenues from PHI do not cover the necessary expenses for property maintenance and small ongoing investments in the long term. Hospitals are therefore dependent on additional funds from other sources. Over the years, capital expenditure from the state budget for healthcare has been increased. Between 2014 and 2018, average expenditure reached EUR 16.5 million, and since 2019 it has been EUR 61 million. Approximately EUR 17 million is invested annually in the construction or renovation of buildings. The rest goes towards technical equipment or IT equipment for hospitals.

Figure 45: Development of capital expenditure of hospitals from the state budget, in EUR million



Note: The increase in expenditure between 2018 and 2020 was mainly due to the central procurement of certain equipment and medical devices. *Source: Budget Information System, VfM*

A significant part of investments in hospitals is financed from EU sources. The most important source in the coming years will be the Recovery and Resilience Plan (RRP). Under the RRP, EUR 998 million has been earmarked for the construction, reconstruction and equipping of hospitals. The RRP originally envisaged the creation of 2 118 new beds and the reconstruction of 548 beds in higher-level hospitals (tertiary and specialised hospitals), which would cover approximately 16% of the necessary beds. The RRP is providing partial financing for the construction of two completely new hospitals in Banská Bystrica and Martin. Dozens of other healthcare facilities will be reconstructed and completed.

Structural funds, known as Eurofunds, are also an important European source of funding. However, public hospitals in Slovakia are less successful than private hospitals in drawing on these funds. In the 2014–2020 programming period, healthcare facilities used a total of EUR 287 million. Under a call for proposals aimed at modernising infrastructure, EUR 94 million was allocated to public hospitals and EUR 96 million to non-public hospitals.[56] The drawdown is at a similar level despite the fact that public hospitals provide a significantly larger proportion of beds and care (only 25% of beds are privately owned) and should therefore be able to draw down approximately a proportionate volume of resources. The low utilisation by state hospitals may also have been influenced by the condition relating to the 2017 Integrated Regional Operational Programme[57] that the applicant should not be an enterprise in difficulty (see Box 23 for more details), while many state hospitals have debts to suppliers and the Social Insurance Agency. In the new Operational Programme Slovakia 2021-2027, hospitals no longer have funds directly allocated for infrastructure renewal and construction. The programme focuses more on climate goals and the development of science and research.

Table 13: Drawdown of EU funds in 2014–2020 for investments in hospitals, in EUR million

	Private hospitals	Public hospitals
Share of beds	25 %	75 %
Total investment	112	175
Number of projects	54	82
Investments in infrastructure	96	94

Source: ITMS, MoH SR, VfM

Slovak public hospitals lag behind other EU countries in terms of drawing on EU funds. EU funds are a significant source of investment in the renewal of healthcare infrastructure for many EU countries (e.g. Poland, Lithuania, Estonia).

[56] The amount is calculated from the currently contracted total amount and takes into account calls for infrastructure modernisation under the IROP operational programme relating to buildings and equipment. The rest of the projects consist of calls aimed at managing the COVID-19 pandemic, IT projects, reducing energy intensity, etc.

[57] The condition was also part of more recent calls. In the case of hospitals, the ratio between debt-to-equity ratio and interest coverage are verified.

According to an analysis by the Government Office, the setup of drawing EU funds in Slovakia is generally ineffective. For example, there is a significant difference between the contracted and drawn amounts compared to other countries. This may be due to the late announcement of calls for proposals and the failure to provide funds for preparation. At the time of the call for proposals, state hospitals often do not have projects ready and must request funds from the MoH SR for preparation, the approval of which takes time. Poland addresses this problem by providing funds for preparation in advance and reimbursing them retrospectively from EU funds.

Routine maintenance of hospital infrastructure should be covered by revenues from PHI to prevent further investment backlog accumulation. In addition to gradually resolving historical backlog, it is also necessary to ensure a long-term system to prevent its accumulation. In several countries (e.g. the Czech Republic and England), depreciation is also included in DRG reimbursements, as it is considered an operating cost.

Box 23: Czech public hospitals could draw on European funds even if they were in debt

According to the conditions set by the MoH SR, some state hospitals were/are undertakings in difficulty, as a result of which only a fraction of the 44 state hospitals were eligible to apply for EU funds. In 2017 and 2018, the MoH communicated in press releases that funds from the Integrated Regional Operational Programme (IROP) from EU sources could not be provided to companies in difficulty, which meant that several state hospitals were excluded due to their debts. The MoH probably based its decision on a Deloitte analysis, which, however, states at the outset that "*the proposed solutions it provides are only theoretical in nature and their implementation requires a detailed analysis of the impact of these solutions*." Deloitte advised the MoH to further consider the possibility of state hospitals drawing funds from the IROP. However, this did not happen.

During the same period, the Czech Republic also drew funds from the IROP, but did not examine or apply the condition of "not being an undertaking in difficulty". The European IROP rules state that state-funded semi-budgetary organisations do not have to prove that they are not enterprises in difficulty. The introduction of this condition when assessing the eligibility of Slovak hospitals for financial contributions can be described as so-called gold plating on the part of the Slovak authorities.

The MoH SR continues to ignore the case law of the Court of Justice of the European Union, according to which all hospitals can be classified as entities eligible for financial contributions from the IROP, regardless of whether they are in debt or not.[58] For example, judgment C-492/21 P[59] should also be assessed in relation to the current position of the MoH SR, according to which "state aid are those measuers in favour of undertakings which meets the following cumulative criteria:

- transfer of public resources (referred to as 'state resources' in Article 107 TFEU) and imputability to the state;
- economic advantage for the recipient of the aid (many underatkings have problems paying their liabilities);
- selectivity of the aid measure (only healthcare facilities under the founding jurisdiction of the MoH SR);
- impact on competition (private companies will not have this option);
- impact on intra-EU trade (the customers of the creditors are various companies).

The judgment was based on the judgment of 11 June 2020, Commission and Slovak Republic v Dôvera zdravotná poisťovňa (C-262/18 P and C-271/18 P, EU:C:2020:450, paragraph 32) and, in particular, the conclusion that social security systems, including health insurance systems based on public health insurance, implement the principle of solidarity. As a result, these providers cannot be regarded as undertakings within the meaning of Article 107(1) TFEU. This was a case where the absence of competition was assessed in relation to a joint-stock company owned by private investors. **The above facts were also fulfilled in case C-492/21, and the activities of public healthcare facilities cannot be considered business activities either.**

It is necessary to assess the impact of this judgment on the current understanding of the status of hospitals, which the MoH SR classifies as undertakings. It is precisely the definition of hospitals as undertakings, or in the case of state-

[58] Judgment of the Court of Justice of 19 December 2019 in Case C-262/18 P and C-271/18 P European Commission v Dôvera zdravotná poisťovňa, a. s.

[59] Judgment of the Court of Justice of 2 June 2021 in Case C-492/21 P Casa Regina Apostolorum della Pia Società delle Figlie di San Paolo v Commission.

owned hospitals, often as undertakings in difficulty, that has led to the prevention of the use of European funds. The result is a significant widening of the investment gap between state and non-state hospitals. The gap has manifested itself in the indebtedness of state hospitals. However, this problem is not a thing of the past; on the contrary, due to the need for additional funding for the construction of new hospitals from the Recovery Plan, which the MoH SR is continuously requesting, it is still present today.

6.2 Investment project planning needs to be improved

In addition to limited financial resources, insufficient strategic and investment planning is also a significant problem. The MoH SR has long lacked a clear plan for addressing high investment backlog, and hospitals lack prepared projects. One of the reasons why hospital investment projects have not been prepared for a long time is the low predictability of their financing sources. It is the task of the MoH SR to draw up a long-term plan for financing the investment backlog and to name specific hospitals whose projects are to be prepared from public funds.

Of the planned investments worth EUR 228 million for 2023, EUR 17 million has been used. This is mainly due to the poorer utilisation of the Recovery and Resilience Plan (RRP), and the situation could have been exacerbated by the failure to allocate funds directly to the MoH SR's budget. Ministries that invest more than EUR 20 million per year on average are required to prepare and publish a prioritised investment plan for all projects over EUR 1 million annually from 2021 onwards. The aim of this plan is to set the ministry's investment priorities for at least five years based on predetermined criteria. In 2023, the MoH SR planned investments separately for financing from the state budget and EU funds (EUR 114.2 million; 10% utilisation) and separately for the RRP (EUR 113.9 million; 5% utilisation). For 2023, the MoH SR did not receive funds directly into its budget chapter, but through budgetary measures and from transferred funds during the year, it drew primarily on projects that were not in the investment plan. Actual utilisation reached EUR 53 million, but only EUR 17 million of this was included in the published investment plans for the year. The years 2024 to 2026 will be the first in which it will be possible to monitor the fulfilment of investment plans without the risk of funds not being allocated by the MoF SR and to comprehensively evaluate their fulfilment over a period of several years.

The main shortcoming of the investment plans is the short-term planning of projects and the absence of the preparation of strategic investments in the largest hospitals. The plans are also drawn up separately according to the source of funding, which makes it impossible to set overall priorities for the ministry. In its investment plans, the MoH SR does not address the long-term preparation of large projects for state hospitals beyond the scope of the RRP. Given the high investment backlog, the investment plan should clearly identify priority projects and allocate funds for their preparation over several years. On the other hand, projects with insufficiently prepared documentation were also included in the plan, for which the allocated funds could not be utilised in time. The creation of separate plans according to the source of funding (State Budget, RRP, ESIF) makes it impossible to comprehensively set and monitor priorities. Priorities should be included in a published pool of investment intents, from which a specific investment plan is later created according to the available financing options and project readiness.

The fact that funding is not the only problem was clearly demonstrated in the Recovery and Resilience Plan, which allocated EUR 1 billion for the modernisation of hospitals, but lacked prepared projects from state hospitals. Although the final version of the Slovak Recovery Plan was approved in 2021, the decision to support specific projects was not made until June 2022 and was subsequently changed in the summer of 2023. As a result of the vision of available funding and the absence of clear priorities, state hospitals began to prepare large development projects all at once. In 2022 and 2023, ten major investment projects with a total value of EUR 2.8 billion were announced. It is good that several hospitals have prepared long-term development plans that they can use in the future. However, this uncontrolled process could have been avoided with better investment planning.

The MoH SR should develop an investment strategy that identifies the specific priorities of the ministry in terms of addressing the investment backlog of state hospitals. The strategy should address the gradual preparation of large strategic investments in the long term. It should take into account not only the emergency condition or current readiness of projects, but also the position of hospitals in the network and the impact on the safety and quality of healthcare.

The investment planning process needs to be improved so that expenditure is directed towards the preparation of projects that are included in the ministry's investment plan and planned several years in advance. The investment plan should be truly drawn up for at least five years in advance and should include all sources of funding to enable the ministry's priorities to be comprehensively set and monitored. Higher quality investment planning can increase the transparency and predictability of funding for hospitals, which can then prepare projects in a more targeted manner.

Project selection should be based on clearly defined priorities, regardless of the source of funding. The subsequent decision on the form of financing is secondary and should be made with regard to the type of project. The MoH should continuously collect investment intents in a project pipeline and rank them according to priority. Only then should it create an investment plan based on the pipeline, according to available resources and readiness. The MoF SR has approved a methodological procedure for assessing whether a specific project is suitable for implementation through a PPP ( )[60] . In general, this method is particularly suitable for projects where the private partner can influence demand during operation (e.g. airports), and less so for projects with an externally determined number of users (e.g. motorways).

Before the potential implementation of projects through PPPs, it is necessary to build inpatient capacities that will oversee the fiscal implications of projects and create a strong framework for deciding which projects are suitable for PPPs. This institution should have the power to suspend or cancel a project at any stage if it poses a high fiscal risk. At the same time, it is necessary to anchor processes and rules in clear and consistent legislation. Fiscal transparency must be ensured through reliable documentation of commitments.

Box 24: Alternative options for addressing investment backlog

The unsuccessful resolution of hospital investment backlog raises the question of using other methods, such as public-private partnerships (PPPs). PPPs should be considered as a tool for improving quality and efficiency, but not as a new source of financing. In PPP projects, the state will pay the private partner more over a period of decades than if it had made the investment in the usual way. The involvement of a private partner alone will not solve the state's lack of financial resources or replace its insufficient planning capacities. On the contrary, it may weaken the ability to build hospitals. Even with this form of cooperation, the state must play a key role in the preparation of new hospitals, as these are strategic investments.

The Slovak Republic has the most experience with PPPs in the case of hospitals of regional governments, which are leased and operated by private companies. So far, PPPs have not been successful in Slovakia in the case of large hospitals. An audit by the Supreme Audit Office focused on hospitals managed by higher territorial units pointed to insufficient control over the fulfilment of contracts by regional governments and insufficient care for property. According to a document approved by the government, the planned PPP project for a hospital in Bratislava was cancelled also due to the unbalanced distribution of risks between the partners and the necessary availability payment. An important prerequisite for an effective PPP is transparent payment setting for hospitalizations. Unclear rules pose a risk that the private partner may convert them into a demand for a flat-rate availability payment. However, this reduces their motivation for efficiency. One solution could be the comprehensive introduction of a DRG reimbursement mechanism, which values individual services (covering 30 to 80% of healthcare abroad).

There are examples of foreign PPP hospital projects that have brought financial and qualitative benefits, but the professional literature has not yet sufficiently addressed their impact. According to a PwC study, a private partner in Spain (Alzira model) achieved 30% lower operating costs per capita than areas where hospitals were run by the state. However, in 2018, the state did not renew the contract with the concessionaire due to financial problems and project management failures. Another study from Iran shows that the use of PPPs led to better management by the concessionaire after taking over the management of a state hospital. In this case, management proved itself by reducing the average length of hospital stay, increasing bed occupancy rates and providing better equipment for patients. A study from Portugal showed that PPP hospitals had shorter waiting times than state hospitals, but there were no differences between the hospitals in terms of other qualitative benefits.

[60] The cancelled PPP project for a hospital in Bratislava was conditional on an availability payment that would cover the gap between the private partner's profit and the total amount of capital investment.

Table 14: PPP vs. state management in hospitals

Study	Country	Observation	Improvement compared to state
PwC (2012)	Spain Valencia	Operating costs	30% more economical than the national average
Miguel and Belda (2019)	Spain - Madrid	Operating costs	86% cost efficiency compared to 53% efficiency of the state
Bastani et al. (2019)	Iran	Quantitative indicators	Reduction in ALOS, increase in occupancy, treatment of a larger volume of patients
Ferreira and Marques (2021)	Portugal	Qualitative indicators	Shorter waiting times

Source: VfM

After more than 30 years of experience with PPP projects, the UK decided to discontinue their use due to fiscal risk, lack of flexibility and low transparency. The UK was one of the first countries to employ PPP projects. The more than 700 implemented projects were concentrated mainly in healthcare and education, but they were used in almost all sectors. In 2018, the UK decided to discontinue future PPP projects because they did not deliver the expected value for money. In most cases, the projects were more expensive than originally anticipated. In cases where the state covered maintenance costs, there were multiple overpayment of expenses. Contracts were not flexible, and changes increased costs through administrative or management fees. In some cases, hospital projects saw cost-overrung of up to 50%. One of the disadvantages was a more complicated procurement phase, especially in cases where there was an urgent need for infrastructure development. A lack of transparency also contributed to almost half of the projects examined by the National Audit Office not being in a satisfactory condition upon to state ownership.

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List of abbreviations

Abbreviation	Explanation
BCG	Boston Consulting Group
BSK	Bratislava Self-Governing Region
CKS	Centre for DRG Classification System
CRZ	Central Register of Contracts
CT	Computed tomography
CT	Computed tomography
ČR	Czech Republic
DRG	Diagnosis Related Group
ESIF	European Structural and Investment Funds
EU	European Union
EU-14	The 14 most developed EU countries
EU-27	EU countries
FTE	Full-time equivalent
GDP	Gross domestic product
GG	General government
HIC	Health insurance company
HNO	Hospital network optimization
HPI	Heath policy institute
IZA	Institute for Healthcare Analyses
KPI	Key performance indicator
LOZ	Medical Trade Union
MoE SR	Ministry of Economy of the Slovak Republic
MoF SR	Ministry of Finance of the Slovak Republic
MoH ČR	Ministry of Health of the Czech Republic
MoHZ SR	Ministry of Health of the Slovak Republic
MR	Magnetic resonance
NCZI	National Centre for Health Information
NHS	National Health Service
OECD	Organisation for Economic Co-operation and Development
PHI	Public Health Insurance
PPP	Public-private partnership
RRP	Recovery and Resilience Plan
RRZ	Council for Budget Responsibility
RVS	Public administration budget
SAO	Supreme Audit Office
SBO	Semi-budgetary organisation
SI	Specialized institution
SK	Slovakia
SÚSCH	Central Slovak Institute of Heart and Vascular Diseases

Abbreviation	Explanation
SVaLZ	Ancillary Diagnostic Services
ŠÚSR	Statistical Office of the Slovak Republic
ŠZM	Special medical materials
TASR	The News Agency of the Slovak Republic
TEP	Total endoprosthesis
TIS	Transparency International Slovakia
HCSA	Health Care Surveillance Authority
VfM	Value for Money Division
USG	Ultrasonography
ÚZS	Inpatient healthcare
V3	V4 countries outside Slovakia
VAT	Value added tax
VšZP	Všeobecná zdravotná poisťovňa
VÚC	Higher territorial unit
WHO	World Health Organisation

Abbreviation	Name of hospital
BB	F. D. Roosevelt Teaching Hospital and Polyclinic, Banská Bystrica
DN BB	Children's Teaching Hospital with Polyclinic Banská Bystrica
DN KE	Children's Teaching Hospital Košice
NR	Nitra Teaching Hospital
NÚDCH	National Institute of Children's Diseases
NZ	Nové Zámky Teaching Hospital with Polyclinic
PO	J. A. Reiman Teaching Hospital and Polyclinic, Prešov
TN	Trenčín Teaching Hospital
TT	Trnava Teaching Hospital
UN BA	University Hospital in Bratislava
UN KE	L. Pasteur University Hospital in Košice
UN MT	University Hospital Martin
ZA	Teaching Hospital with Polyclinic Žilina

Annexes

Annex 1: Hospital network in Slovakia and its optimisation

The hospital network with which spending review works consists of 90 healthcare facilities, for which the Classification System Centre (CKS) collects data for the DRG system. Almost 60% of care is provided by hospitals belonging to the MoH SR[61] , while 44% of the total volume of care is generated by 13 teaching and university hospitals. Private hospitals belonging to the AGEL and Penta groups provide 22% and regional hospitals 7%. The remaining nearly 15% is provided by church, smaller private and municipal hospitals.

Table 15: Hospital network in spending review and volume of care provided by individual hospitals in 2023

Name	Category according to CKS DRG	Volume of care	Share of care	Employees (FTE)	Doctors (FTE)	Nurses (FTE)	Public sector	Group/owner
National Cancer Institute in Bratislava	SI - oncology institutions	14,692	1.6	981	187	318	Yes	MoH 19
St. Elizabeth Cancer Institute, Ltd.	SI - oncology institutes	8,034	0.9	803	156	206	No	Other
East Slovak Oncology Institute, a.s.	SI - oncology institutes	6,823	0.8	350	62	131	Yes	MoH 19
National Institute of Heart and Vascular Diseases, a.s.	SI - cardioinstitutes	30,013	3.3	1,023	190	424	Yes	MoH 19
East Slovak Institute of Heart and Vascular Diseases, a.s.	SI - cardioinstitutes	23,254	2.6	862	123	292	Yes	MoH 19
Central Slovak Institute of Heart and Vascular Diseases, a.s.	SI – cardioinstitutes	20,065	2.2	490	85	216	Yes	MoH 19
CINRE, Ltd.	SI - cardioinstitutes	5,923	0.7	192	45	85	No	Penta
Cardiocentre AGEL s.r.o.	SI - cardioinstitutes	5,694	0.6	NA	NA	NA	No	AGEL
Cardiocentre Nitra, Ltd.	SI - cardioinstitutes	4,425	0.5	133	26	55	No	Other
National Institute of Children's Diseases	Children's hospitals	17,809	2.0	1,360	324	460	Yes	MoH 13
Children's Teaching Hospital Košice	Children's Hospitals	10,081	1.1	706	129	284	Yes	MoH 13
Children's Teaching Hospital with Polyclinic Banská Bystrica	Children's hospitals	3,932	0.4	423	85	144	Yes	MoH 13
University Hospital in Bratislava	Hospitals 4	72,542	8.0	5,353	1,203	1,581	Yes	MoH 13
L. Pasteur University Hospital Košice	Hospitals 4	46,422	5.1	3,921	678	1,115	Yes	MoH
F. D. Roosevelt Teaching Hospital and Polyclinic, Banská Bystrica	Hospitals 4	37,548	4.1	2,573	410	756	Yes	MoH 13
University Hospital Martin	Hospitals 4	35,086	3.9	2,439	447	785	Yes	MoH 13
Institute of Nuclear and Molecular Medicine	Hospitals 4	299	0.0	74	20	11	Yes	MoH
J. A. Reiman Teaching Hospital and Polyclinic, Prešov	Hospitals 3	42 162	4.6	2,810	461	1,085	Yes	MoH 13
Teaching Hospital with Polyclinic Žilina	Hospitals 3	30,371	3.3	2,084	347	695	Yes	MoH 13
Nitra Teaching Hospital	Hospitals 3	25,557	2.8	1,690	300	571	Yes	MoH 13
Trenčín Teaching Hospital	Hospitals 3	24,803	2.7	1,543	284	556	Yes	MoH 13
Trnava Teaching Hospital	Hospitals 3	24,376	2.7	1,462	288	540	Yes	MoH 13
Teaching Hospital with Polyclinic Nové Zámky	Hospitals 3	24,222	2.7	1,463	230	501	Yes	MoH 13
Central Military Hospital SNP Ružomberok - Teaching Hospital	Hospitals 3	19,225	2.1	NA	NA	NA	Yes	MO
Poprad Hospital, a.s.	Hospitals 3	18,267	2.0	1,352	240	409	Yes	MoH 19

[61] In Table 15, the hospitals of the MoH SR are divided into MoH 13 - consisting of 13 teaching and university hospitals, MoH 19 - which are hospitals that together with MoH 13 form the 19 main hospitals of the MoH SR, and MoH - which include other MoH SR hospitals not classified as either MoH 13 or MoH 19.

Name	Category according to CKS DRG	Volume of care	Share of care	Employees (FTE)	Doctors (FTE)	Nurses (FTE)	Public sector	Group/owner
Štefan Kukura Hospital and Polyclinic Michalovce, a.s.	Hospitals 3	16,015	1.8	816	151	317	No	Penta
AGEL Košice-Šaca Hospital, a.s.	Hospitals 3	14,424	1.6	1,043	233	294	No	AGEL
National Institute of Tuberculosis, Lung Diseases and Thoracic Surgery Vyšné Hágy	Hospitals 3	8,537	0.9	426	65	136	Yes	MoH
University Hospital - St. Michael's Hospital, a.s.	Hospitals 3	6,878	0.8	NA	NA	NA	Yes	MV
Bory Hospital, a.s.	Hospitals 3	4,513	0.5	943	211	206	No	Penta
National Institute of Rheumatic Diseases	Hospitals 3	2,706	0.3	189	20	51	Yes	MoH
National Institute of Paediatric Tuberculosis and Respiratory Diseases, n.o. (Dolný Smokovec)	Hospitals 3	2,262	0.2	161	16	51	Yes	Other
Mammacentrum sv. Agáty Banská Bystrica, a.s.	Hospitals 3	998	0.1	NA	NA	NA	No	AGEL
Hospital with polyclinic Považská Bystrica	Hospitals 1,2	13,192	1.5	980	156	305	Yes	VÚC
AGEL Levice Hospital, Ltd.	Hospitals 1,2	12,273	1.4	581	87	152	No	AGEL
Prievidza Hospital and Polyclinic based in Bojnice	Hospitals 1,2	12,059	1.3	1,000	150	321	Yes	VÚC
Kysucká Hospital with Polyclinic Čadca	Hospitals 1,2	11,844	1.3	907	112	242	Yes	VÚC
AGEL Komárno Hospital, Ltd.	Hospitals 1,2	10,396	1.1	577	95	200	No	AGEL
AGEL Hospital Zvolen, a.s.	Hospitals 1,2	10,143	1.1	715	128	216	No	AGEL
Lučenec General Hospital with Polyclinic, n.o.	Hospitals 1,2	10,027	1.1	780	96	290	No	Other
Hospital with Polyclinic Dunajská Streda, a.s.	Hospitals 1,2	9,885	1.1	516	80	163	No	Penta
Dolnooravská Hospital with Polyclinic MUDr. L. Nádaši Jégého Dolný Kubín	Hospitals 1,2	9,725	1.1	626	100	191	Yes	VÚC
Hospital with polyclinic. St. Luke Galanta, a.s.	Hospitals 1,2	9,585	1.1	651	99	215	No	Penta
Hospital with Polyclinic Spišská Nová Ves, a.s.	Hospitals 1,2	9,536	1.1	484	37	165	No	Penta
Penta Hospitals SK, a.s. (Hospital in Rimavská Sobota)	Hospitals 1,2	9,207	1.0%	591	82	211	No	Penta
Topoľčany Hospital, a.s.	Hospitals 1,2	8,870	1.0	474	78	170	No	Penta
NsP Sv. Jakuba, n.o. (Bardejov)	Hospitals 1,2	8,780	1.0	809	133	236	No	Other
A. Leňa Humenné Hospital, a.s.	Hospitals 1,2	8,368	0.9	474	71	189	No	Penta
Vranovská nemocnica, a.s.	Hospitals 1,2	8,290	0.9	541	89	185	No	Penta
Ľubovnianska Hospital, n.o.	Hospitals 1,2	7,716	0.9	525	86	171	Yes	Other
Trebišov Hospital and Polyclinic, a.s.	Hospitals 1,2	7,100	0.8	626	76	199	No	Penta
Liptov Hospital with Polyclinic MUDr. Ivan Stodola Liptovský Mikuláš	Hospitals 1,2	7,069	0.8	691	101	227	Yes	VÚC
Skalica Teaching Hospital with Polyclinic, a.s.	Hospitals 1,2	6,777	0.7	NA	NA	NA	No	AGEL
Hornooravská Hospital with Polyclinic Trstená	Hospitals 1,2	6,650	0.7	582	88	192	Yes	VÚC
St. Barbara Hospital and Polyclinic Rožňava, a.s.	Hospitals 1,2	6,223	0.7	498	61	173	No	Penta
Alexandra Winter Hospital, n.o.	Hospitals 1,2	6,182	0.7	523	80	128	Yes	Other
Brezno Hospital and Polyclinic, n.o.	Hospitals 1,2	6,032	0.7%	591	74	135	Yes	Other
Hospital Žiar nad Hronom and Banská Štiavnica, Ltd.	Hospitals 1,2	5,776	0.6	400	38	120	No	AGEL
Army General L. Svoboda Hospital Svidník, a.s.	Hospitals 1,2	5,345	0.6	357	48	122	No	Penta
AGEL Levoča Hospital, a.s.	Hospitals 1,2	5,220	0.6	540	74	173	No	AGEL
National Institute of Endocrinology and Diabetology, n.o.	Hospitals 1,2	4,858	0.5	185	36	69	Yes	Other
Specialised Hospital of St. Svorad Zobor, n.o.	Hospitals 1,2	4,344	0.5	297	41	98	Yes	Other
Snina Hospital, Ltd.	Hospitals 1,2	4,312	0.5	273	34	91	Yes	Other
Hospital on the outskirts of town, n.o.	Hospitals 1,2	4,224	0.5	282	33	101	No	Penta
AGEL Krompachy Hospital, Ltd.	Hospitals 1,2	4,147	0.5	267	44	91	No	AGEL
Dr. Vojtech Alexander Hospital in Kežmarok, n.o.	Hospitals 1,2	3,952	0.4	253	36	104	Yes	AGEL

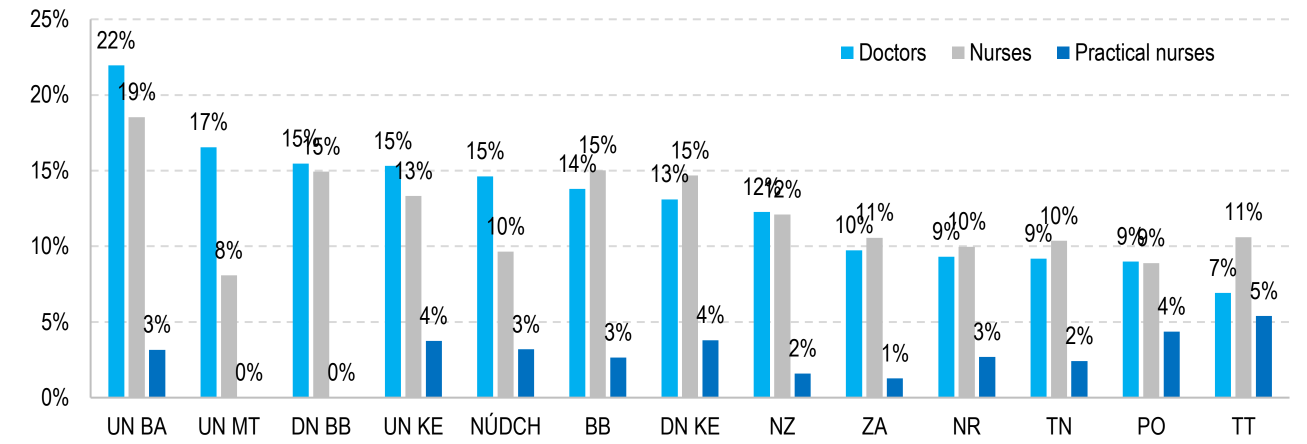
Name	Category according to CKS DRG	Volume of care	Share of care	Employees (FTE)	Doctors (FTE)	Nurses (FTE)	Public sector	Group/owner
Hospital with polyclinic Myjava	Hospitals 1,2	3,745	0.4	333	45	95	Yes	VÚC
Nemocničná, a.s. (Malacky)	Hospitals 1.2	3,635	0.4	370	82	130	No	Other
University Hospital with Polyclinic Milosrdní bratia, spol. s.r.o.	Hospitals 1,2	3,373	0.4	NA	NA	NA	No	Other
Hospital with Polyclinic, n.o. Kráľovský Chlmec	Hospitals 1,2	3,229	0.4	218	23	66	No	Other
General Hospital with Polyclinic, n.o. (Veľký Krtíš)	Hospitals 1,2	3,213	0.4	274	26	85	Yes	Other
Railway Healthcare Košice, Ltd.	Hospitals 1.2	3,187	0.4	300	92	126	No	Penta
Hospital with Polyclinic, n.o. Revúca	Hospitals 1,2	3,092	0.3	226	26	52	No	Other
NsP Nové Mesto nad Váhom, n.o.	Hospitals 1,2	2,382	0.3	204	35	61	Yes	Other
AGEL Bánovce Hospital, Ltd.	Hospitals 1,2	1,895	0.2	174	30	57	No	AGEL
ORL HUMENNÉ, Ltd.	Hospitals 1,2	1,763	0.2	68	18	28	No	Other
AGEL Zlaté Moravce Hospital, a.s.	Hospitals 1,2	1,507	0.2	136	17	47	No	AGEL
Specialised Hospital for Orthopaedic Prosthetics Bratislava, n.o.	Hospitals 1,2	1,384	0.2	92	14	24	Yes	Other
GPN, Ltd.	Hospitals 1.2	1,367	0.2	110	23	26	No	Other
Highly specialised geriatric institute of St. Luke in Košice, n.o. Hospitals 1,2	Hospitals 1,2	1,316	0.1	145	15	32	Yes	Other
Hospitale, Ltd.	Hospitals 1,2	1,130	0.1	NA	NA	NA	No	Other
Ilava Hospital and Polyclinic, n.o.	Hospitals 1,2	1,096	0.1	165	16	51	Yes	Other
Clinica Orthopedica, Ltd.	Hospitals 1,2	1,073	0.1	NA	NA	NA	No	Other
Sobrance Regional Hospital, n.o.	Hospitals 1,2	943	0.1	83	8	18	Yes	Other
AGEL Handlová Hospital, Ltd.	Hospitals 1,2	885	0.1	116	14	30	No	AGEL
PRI VITAE n.o.	Hospitals 1,2	675	0.1	NA	NA	NA	No	Other
OFTAL, Ltd.	Hospitals 1,2	225	0.0	49	10	23	No	Other
Akadémia Košice, n.o.	Hospitals 1,2	159	0.0	NA	NA	NA	No	Other
Novapharm, Ltd.	Hospitals 1,2	147	0.0	NA	NA	NA	No	Other
AGEL clinic s. r. o.	Hospitals 1,2	95	0.0	NA	NA	NA	No	AGEL

Note: The volume of care is measured using an effective case mix, i.e. the number of standardised hospitalizations. The hospital network presented does not include a small number of hospitals located in the HNO (e.g. psychiatric hospitals) and includes some that are not included in the HNO (Military Hospital in Ružomberok, Sv. Michala Hospital).

Source: MoH SR *(CKS DRG), VfM*

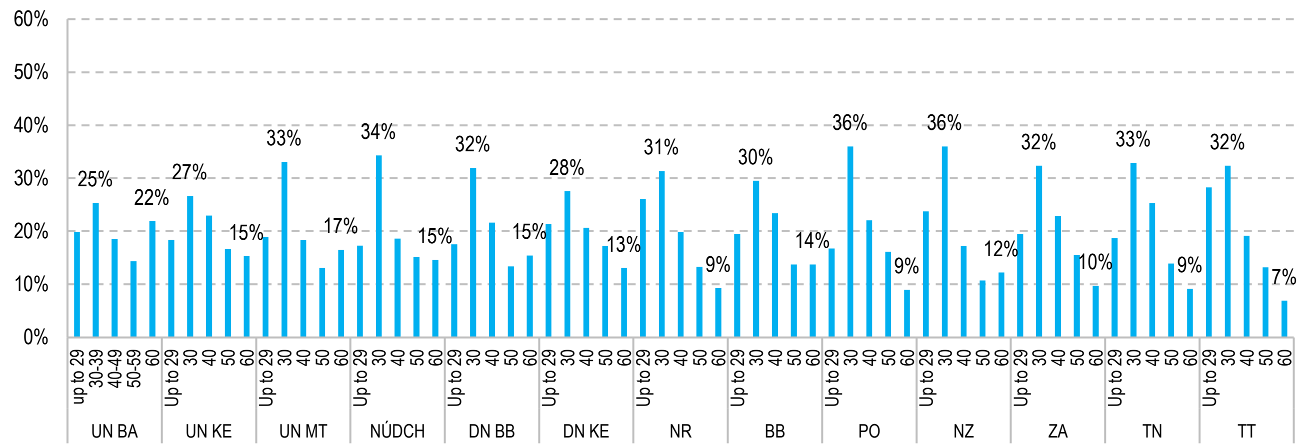
Half of Slovak hospital doctors and almost half of all hospital staff work in 13 teaching and university hospitals. The University Hospital in Bratislava has the highest share of doctors (22%) and nurses (19%) of pre-retirement and retirement age. The share of nurses in the 60+ age group is close to 15% at the Banská Bystrica Hospital and the children's hospitals in Banská Bystrica and Košice. The age of practical nurses is less critical (Figure 46 and Figure 49).

Figure 46: Share of employees aged 60 and over across the 13 teaching and university hospitals, 2023



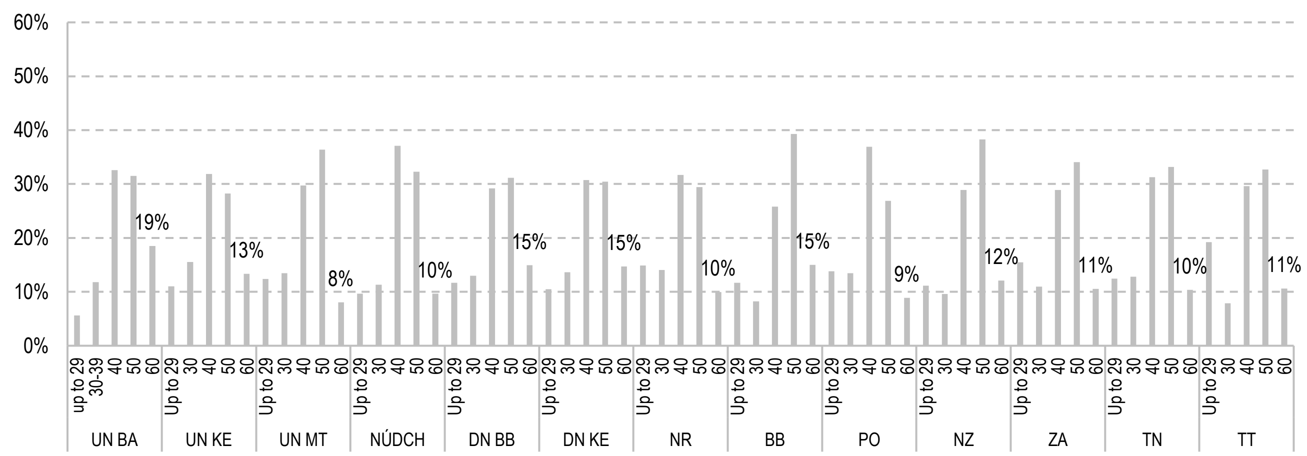
Source: MoH SR, VfM

Figure 47: Age distribution of physicians across the 13 teaching and university hospitals, 2023



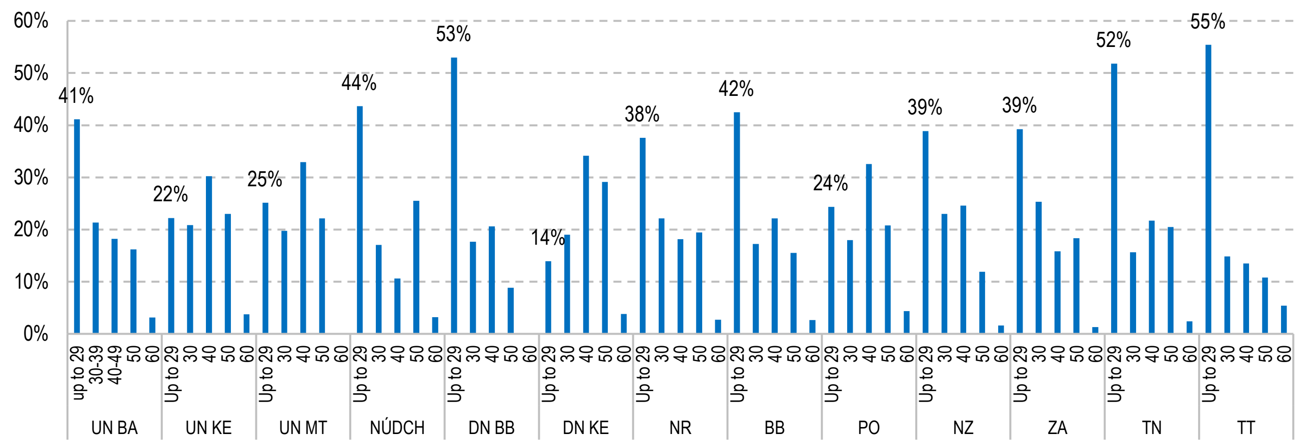
Source: MoH SR, VfM

Figure 48: Age distribution of nurses across the 13 teaching and university hospitals, 2023



Source: MoH SR, Health Information Agency

Figure 49: Age distribution of practical nurses across the 13 teaching and university hospitals, 2023



Source: MoH SR, VfM

Slovak hospital care is not evenly distributed across regions. The highest number of beds per capita is in the Košice (6.81) and Bratislava (6.47) regions, with Bratislava having mainly acute beds, which is understandable given the capital's role in the hospital network. The Košice region, on the other hand, leads in the number of long-term beds.

Table 16: Regional distribution of acute and long-term inpatient care beds, 2023

Region	All	Acute	Long-term*	All	Acute	Long-term*	Population
	Numbers			*Per thousand inhabitants*			
Bratislava	4,714	4,131	583	6.47	5.67	0.80	728,37
Trnava	2,296	1,865	431	4.6	3.30	0.76	565,573
Trenčín	2,819	2,216	603	4.94	3.88	1.6	570,675
Nitra	3,437	3,087	350	5.12	4.60	0.52	670,696
Žilina	3,916	3,169	747	5.69	4.61	1.9	688,106
Banská Bystrica	3,994	3,245	749	6.47	5.26	1.21	617,177
Prešov	4,839	4,062	777	5.99	5.3	0.96	808,090
Košice	5,311	4,039	1,272	6.81	5.18	1.63	779,505
Total	31,326	25,814	5,512	5.77	4.76	1.2	5,428,192

** Long-term, chronic and follow-up care beds.*

Source: MoH SR, VfM

Hospital network optimization

The Hospital network optimization (HNO) is a comprehensive reform aimed at ensuring accessible, high-quality and safe healthcare for all patients. The reform defines the hospital network in terms of both geographic accessibility (travel time) and catchment areas. It also defines the scope of care and the conditions under which it should be provided. Patients should benefit significantly from this reform. The proposed changes aim to bring greater order and clarity to the system.

The HNO, together with the decree on the categorisation of inpatient care, defines five hospital levels and clearly defines their programme profile. Healthcare is divided into more than 60 programmes, which also have 5 levels. The first level generally includes services that can be provided as part of day-case surgery or outpatient care, with the level of complexity and difficulty of services and diagnoses increasing as the level rises. Each hospital has a set of services that it provides through its programme profile, which is based on the level of the hospital.

- Mandatory programmes – hospitals must provide these in order to maintain the complexity of healthcare. The exact scope of mandatory programmes varies according to the level of the hospital; the higher the level, the more mandatory programmes there are.
- Supplementary programmes – these are subject to approval by the categorisation commission, which is based on the need for a given programme in a specific area.

- Non-mandatory programmes – hospitals provide these on the basis of an agreement with the health insurance company; approval by the network commission is not required.
- Prohibited programmes – the hospital is not allowed to provide them[62] .

The HNO has the potential to increase patient safety and quality of care. For more than 600 medical services (about 40%), it introduces *maximum waiting times*, i.e. the latest time by which the indicated treatment must be provided to the patient after the indication. For hundreds of medical services, it specifies *the minimum volume requirements* that a hospital, workplace or even a doctor must perform per year. Beyond quality and safety, this also impacts operational efficiency of hospitals. The decree also specifies *material, technical and personnel requirements* for each programme and individual levels. It also defines *quality indicators* for all programmes.

The hospital network is not static, and the law introduces a mechanism for responding to the changing needs of the population. If the annual evaluation of the network based on data confirms a growing need for care in a particular programme or service, the number of hospitals providing the programme will be expanded through approved supplementary programmes. Similarly, if a hospital fails to meet the specified requirements, it may lose full reimbursement from health insurance companies. Long-term non-compliance may result in the loss of the programme or the hospital being reclassified to a lower category. All hospital-level data will be published annually by 30 June as part of the network evaluation. This happened for the first time in 2023.

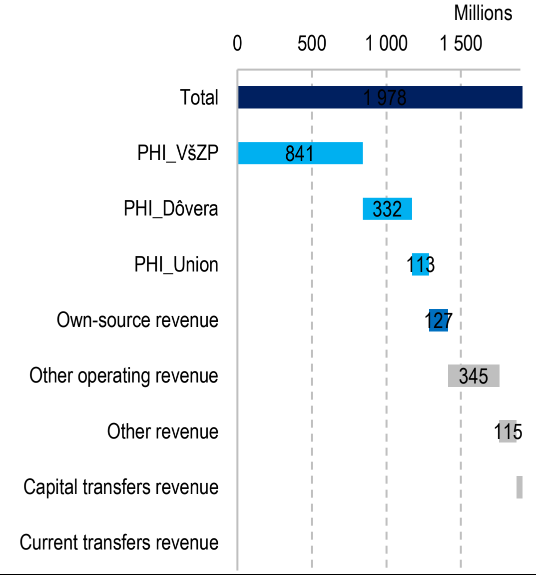
[62] Legislation on the hospital netowrk optimization regulates the scope of care that can be reimbursed to hospitals from public health insurance. Hospitals can continue to provide the same scope of care as before for full patient reimbursement (Act No. 540/2021 Coll. on the categorisation of institutional healthcare).

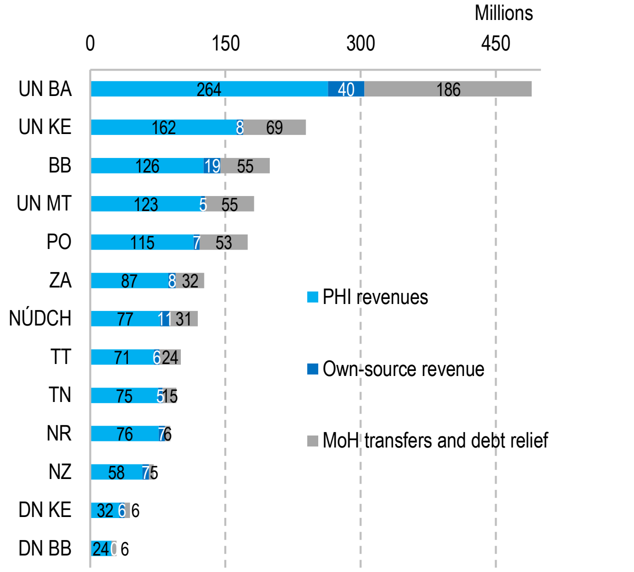
[62] In 2023, the international consulting firm BCG prepared a study for the MoH SR on the capacity of healthcare facilities and improving the quality of healthcare provided.

Annex 2: Revenues of 13 teaching and university hospitals of the MoH SR

Thanks to additional funding and an increase in the PHI, the total revenues of 13 teaching and university hospitals in 2023 were sufficient for the hospitals to generate an average profit of EUR 11.6 million. This surplus was used to cover losses from previous periods, as their total liabilities at the end of the same year amounted to EUR 700 million. The reported revenues do not include the total turnover from public pharmacies operated by hospitals; only the operating profit of these pharmacies (their revenues minus their costs) was included.

Figure 50: Revenues of 13 teaching and university hospitals of the MoH SR in 2023





Source: MoH SR, VfM

Annex 3: Evaluation of lump sum payments in relation to expected and actual hospital production

The conditions for adjusting flat-rate payments to hospitals by health insurance companies in the event of exceeding or failing to meet production targets are not uniform. Since neither hospitals nor insurance companies publish production data, it is not possible to compare and evaluate them using publicly available data.

Calculation for adjusting the flat-rate payment for acute care in the contract between the VŠZP insurance company and the University Hospital in Bratislava

4. Vyhodnocovanie prospektívneho rozpočtu

Vyhodnocovanie prospektívneho rozpočtu vykonáva poisťovňa pre účely optimálneho nastavenia výšky prospektívneho rozpočtu za hodnotené obdobie. Vyhodnocovaním sa zisťuje primeranosť výšky nastaveného prospektívneho rozpočtu za hodnotené obdobie vo vzťahu k skutočne poskytnutej a uznanej zdravotnej starostlivosti poskytovateľom.

Termíny vyhodnotenia prospektívneho rozpočtu s finančným zúčtovaním:

Hodnotené obdobie (od - do)		Vyhodnocovanie (od – do)		Finančné zúčtovanie
1.1.	30.6.	1.7.	30.9.	Vo faktúre za poskytnutú ZS v mesiaci september
1.1.	31.12.	1.1.	31.3.	Vo faktúre za poskytnutú ZS v mesiaci marec

Vyhodnotenie sa realizuje nasledujúcim postupom:

$$\frac{CM_{HODN}}{CM_{REF}}$$

CM HODN – casemix hodnoteného obdobia – súčet efektívnych relatívnych váh akceptovaných hospitalizačných prípadov za hodnotené obdobie
CM REF – casemix referenčného obdobia na účely vyhodnotenia pre definované hodnotené obdobie (na účely vyhodnotenia sa ZS na NON-DRG zohľadňuje nasledovne: 1OD = 0,1; 1UH = 1,0)

Miesto prevádzky Limbová 5, 831 01 Bratislava

CM REF	
hodnotené obdobie od 1.1. do 30.6.	5 702,51
hodnotené obdobie od 1.1. do 31.12.	11 405,01

Miesto prevádzky Ružinovská 6, 821 01 Bratislava

CM REF	
hodnotené obdobie od 1.1. do 30.6.	8 936,62
hodnotené obdobie od 1.1. do 31.12.	17 873,24

Miesto prevádzky Antolská 11, 851 07 Bratislava

CM REF	
hodnotené obdobie od 1.1. do 30.6.	5 845,48
hodnotené obdobie od 1.1. do 31.12.	11 690,95

Miesto prevádzky Mickiewiczova 13, 813 69 Bratislava

CM REF	
hodnotené obdobie od 1.1. do 30.6.	2 213,53
hodnotené obdobie od 1.1. do 31.12.	4 427,05

Výsledok vyhodnotenia: $\frac{CM_{HODN}}{CM_{REF}}$		
≥98,00 %; ≤ 102,00 %	< 98,00 %	> 102,00 %

Neutrálne pásmo – proces finančného zúčtovania sa nerealizuje	Realizácia procesu finančného zúčtovania	Realizácia procesu finančného zúčtovania

Proces finančného zúčtovania hodnoteného obdobia „1.1. až 30.6.“:

$$\sum PRUZZ_{hodn.obdobie} \times \%\ zúčtovania$$

Proces finančného zúčtovania hodnoteného obdobia „1.1. až 31.12.“:

$$\sum PRUZZ_{hodn.obdobie} \times \%\ zúčtovania - výsledok\ finančného\ zúčtovania\ v\ Eur\ za\ hodnotené\ obdobie\ 1.1.\ až\ 30.6$$

∑PRUZZ hodnoteného obdobia – hodnota PRUZZ za hodnotené obdobie od 1.1. do 30.6.; prípadne od 1.1. do 31.12.;

% zúčtovania – vyjadruje % čerpania ako výsledok vyhodnotenia po zohľadnení neutrálneho pásma.
(pozn. na účely vyčíslenia finančného zúčtovania +-1,00% čerpania ako výsledok vyhodnotenia predstavuje 0,2% zo súčtu ∑PRUZZ hodnoteného obdobia).

% zúčtovania sa vypočíta nasledovne:

→ ak je % čerpania ako výsledok vyhodnotenia < 98,00 %

$$\%\ zúčtovania = \frac{(\%\ čerpania\ ako\ výsledok\ vyhodnotenia - 98{,}00\%)}{5}$$

→ ak je % čerpania ako výsledok vyhodnotenia > 102,00 %

$$\%\ zúčtovania = \frac{(\%\ čerpania\ ako\ výsledok\ vyhodnotenia - 102{,}00\%)}{5}$$

V celkovej výške realizácie finančného zúčtovania za obdobie od 1.1. do 31.12. sa zohľadní aj suma finančného zúčtovania realizovaného za obdobie od 1.1. do 30.6.

Calculation for adjusting the flat-rate payment for inpatient care in the contract between the Dôvera insurance company and Bratislava University Hospital

Výpočet koeficientu a určenie parametrov podľa bodu 15.4. Zmluvy

a) Koeficient (Koef) zohľadňujúci zmenu casemixu a počtu Hospitalizačných prípadov medzi referenčným a hodnoteným obdobím sa vypočíta nasledovne:

$$Koef = \left(\frac{Koef_{max} - Koef_{min}}{\pi}\right) \times \tan^{-1}\left[25 \times \left(Koef_{CD} - \left(\frac{Koef_{max} + Koef_{min}}{2}\right)\right)\right] + \left(\frac{Koef_{max} + Koef_{min}}{2}\right)$$

Označenie parametra	Názov parametra	Popis parametra
Koef	Koeficient	Koef = zohľadňuje zmenu casemixu a počtu Hospitalizačných prípadov medzi referenčným a hodnoteným obdobím
$Koef_{max}$	Maximálna hodnota Koeficientu	$Koef_{max}$ = maximálna hodnota koeficientu pre úhradu za Hospitalizačné prípady, ktorá je dohodnutá vo výške 1,05
$Koef_{min}$	Minimálna hodnota Koeficientu	$Koef_{min}$ = minimálna hodnota koeficientu pre úhradu za Hospitalizačné prípady, ktorá je dohodnutá vo výške 0,95
$Koef_{CD}$	Koeficient Cobb-Douglasovej produkčnej funkcie	$Koef_{CD}$ = koeficient, ktorý zohľadňuje zmenu casemixu a počtu Hospitalizačných prípadov medzi referenčným a hodnoteným obdobím pomocou Cobb-Douglasovej produkčnej funkcie

b) Koeficient Cobb-Douglasovej produkčnej funkcie sa vypočíta nasledovne:

$$Koef_{CD} = \min\{Koef_{CM};\ (Koef_{CM})^{0,5} \times (Koef_{PHP} + 0,04)^{0,5}\}$$

$$Koef_{CM} = \frac{CM_{x-n;hod}}{CM_{x-n;ref}} \qquad Koef_{PHP} = \frac{PHP_{x-n;hod}}{PHP_{x-n;ref}}$$

Označenie parametra	Názov parametra	Popis parametra
Min	Funkcia min	min = funkcia, ktorá vyberie z oboru hodnôt najnižšiu hodnotu
$Koef_{CM}$	Koeficient vývoja casemixu	$Koef_{CM}$ = koeficient vývoja casemixu medzi referenčným a hodnoteným obdobím
$Koef_{PHP}$	Koeficient vývoja počtu Hospitalizačných prípadov	$Koef_{PHP}$ = koeficient vývoja počtu Hospitalizačných prípadov medzi referenčným a hodnoteným obdobím
$CM_{x-n;ref}$	Suma efektívnych relatívnych váh v referenčnom období	$CM_{x-n;ref}$ = suma efektívnych relatívnych váh Hospitalizačných prípadov ukončených v referenčnom období
$CM_{x-n;hod}$	Suma efektívnych relatívnych váh v hodnotenom období	$CM_{x-n;hod}$ = suma efektívnych relatívnych váh Hospitalizačných prípadov ukončených v hodnotenom období
$PHP_{x-n;ref}$	Počet Hospitalizačných prípadov v referenčnom období	$PHP_{x-n;ref}$ = počet Hospitalizačných prípadov ukončených v referenčnom období
$PHP_{x-n;hod}$	Počet Hospitalizačných prípadov v hodnotenom období	$PHP_{x-n;hod}$ = počet Hospitalizačných prípadov v hodnotenom období
x-n,ref	Referenčné obdobie (RO)	RO = referenčným obdobím sú príslušné kalendárne mesiace x-n referenčného obdobia
x-n,hod	Hodnotené obdobie (HO)	HO = hodnoteným obdobím sú príslušné kalendárne mesiace x-n hodnoteného obdobia

c) Poisťovňa a Poskytovateľ sa dohodli na určení konkrétnej hodnoty parametra $UHR_{x-n;ref}$, $EMZS_{x-n;ref}$, $CM_{x-n;ref}$ a $PHP_{x-n;ref}$ v referenčnom období 2023 nasledovne:

a.

RO	UHR	EMZS	CM	PHP
$1\text{-}3_{;2023}$	*11 962 905*	*537 455*	*3782*	*3959*
$1\text{-}6_{;2023}$	*25 115 562*	*1 038 542*	*7295*	*7505*
$1\text{-}9_{;2023}$	*37 673 343*	*1 539 629*	*10807*	*11051*
$1\text{-}12_{;2023}$	*50 231 124*	*2 040 716*	*14319*	*14596*

d) Poisťovňa a Poskytovateľ sa dohodli na určení konkrétnej hodnoty parametra UHRx-n;ref, EMZSx-n;ref, CMx-n;ref a PHPx-n;ref v referenčnom období 2024 a nasledujúcom takto:

b.

RO	UHR	EMZS	CM	PHP
$1\text{-}3_{;2024\text{ a nasl.}}$	*12 557 781*	*501 087*	*3512*	*3546*
$1\text{-}6_{;2024\text{ a nasl.}}$	*25 115 562*	*1 002 174*	*7024*	*7092*
$1\text{-}9_{;2024\text{ a nasl.}}$	*37 673 343*	*1 503 261*	*10537*	*10637*
$1\text{-}12_{;2024\text{ a nasl.}}$	*50 231 124*	*2 004 349*	*14049*	*14183*

Zmluvné strany sa pre vylúčenie pochybností dohodli, že číselné vyjadrenie parametra uvedené v tabuľke vyššie má vždy prednosť pred jeho slovným vyjadrením podľa bodu 15.4. písmeno a. a b. Zmluvy."

e) Ilustrácia konkrétnych výsledkov koeficientu vzhľadom na zmenu casemixu a počtu Hospitalizačných prípadov medzi referenčným a hodnoteným obdobím je uvedená v nasledovnej tabuľke:

Koef_PHP	Koef_CM																																
	0,980	0,985	0,990	0,995	1,000	1,005	1,010	1,015	1,020	1,025	1,030	1,035	1,040	1,045	1,050	1,055	1,060	1,065	1,070	1,075	1,080	1,085	1,090	1,095	1,100	1,105	1,110	1,115	1,120	1,125	1,130	1,135	1,140
0,910	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,915	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,920	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,925	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,930	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,935	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,940	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,945	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,950	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,955	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,960	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,965	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,970	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,980	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,985	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,990	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0,995	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,005	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,010	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,015	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,020	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,025	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,030	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,035	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,040	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,045	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,050	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,055	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,060	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,065	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,070	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,075	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,080	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,085	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,090	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,095	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1,105	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Annex 4: Labour productivity in 13 teaching and university hospitals

The largest share of hospital staff are healthcare professionals (from 72.5% at UNB to 82.2% at DN KE). The specific structure of the workforce is shown in the following table.

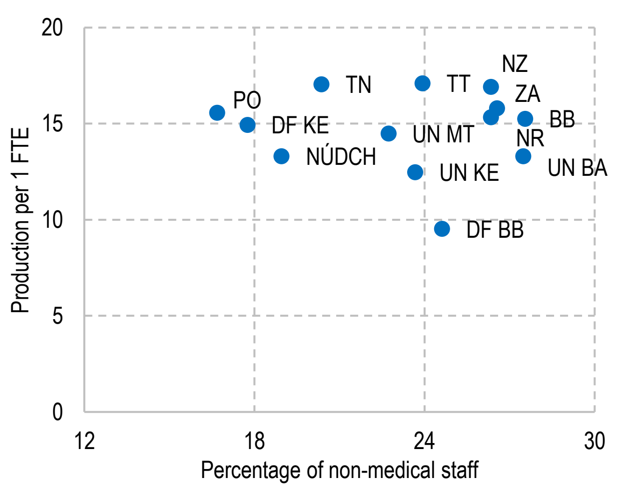
Table 17: Staff structure in 13 teaching and university hospitals by FTE in 2022, in %

Employee / Hospital	BA	KE	PO	BB	MT	ZA	NR	TN	NZ	TT	NÚDCH	DF KE	DF BB
Non-medical worker	**27.5**	**23.7**	**16.7**	**27.6**	**22.7**	**26.4**	**26.6**	**20.4**	**26.3**	**23.9**	**19.0**	**17.8**	**24.6**
Labourers and operational workers	18.9	14.6	10.5	18.2	14.7	19.9	21.0	13.9	20.4	16.9	11.0	8.5	14.5
Technical and economic staff	8.5	9.1	6.2	9.3	8.0	6.5	5.6	6.5	5.9	7.0	8.0	9.2	10.1
Healthcare worker	**72.5**	**76.3**	**83.3**	**72.4**	**77.2**	**73.6**	**73.4**	**79.6**	**73.7**	**76.1**	**81.0**	**82.2**	**75.4**
Assistant	13.4	20.0	21.9	17.3	18.7	18.2	15.4	15.2	18.1	13.0	14.6	20.8	18.4
Pharmacist	1.0	0.5	0.6	0.7	0.3	0.7	0.5	0.5	0.6	0.5	1.4	0.7	0.3
Other healthcare workers	2.1	1.4	0.8	1.2	1.5	0.9	2.8	1.9	0.6	0.7	3.1	0.4	1.4
Laboratory technician	1.4	4.2	1.6	4.2	2.8	1.7	2.4	5.0	2.8	2.2	4.6	0.7	2.2
Doctor and dentist	**22.5**	**18.7**	**16.2**	**16.4**	**19.1**	**16.3**	**17.0**	**18.3**	**14.9**	**19.5**	**23.3**	**18.1**	**19.9**
Midwife	1.9	2.3	3.3	1.7	1.4	1.8	0.8	1.9	1.8	2.8	0.0	0.0	0
Nurse	**30.4**	**29.2**	**38.9**	**30.8**	**33.2**	**34.0**	**34.5**	**36.8**	**34.9**	**37.3**	**33.9**	**41.5**	**33.2**

Source: NCZI, VfM

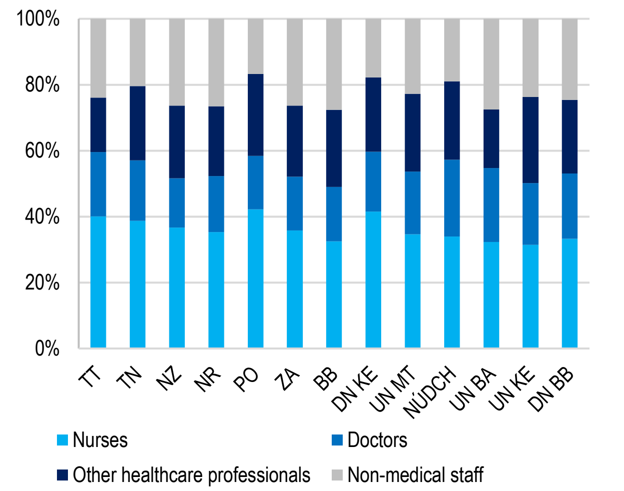
The share of non-medical staff does not have a significant impact on unit productivity. It may be partially influenced by the share of nurses or the ratio between doctors and nurses.

Figure 51: Relationship between the proportion of non-medical staff and production per 1 FTE



Source: NCZI, VfM

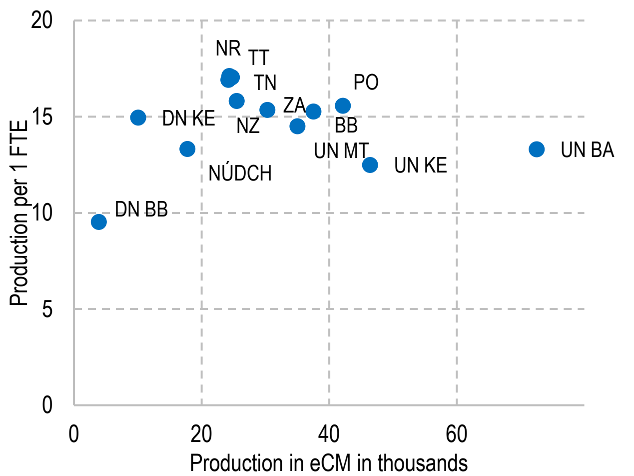
Figure 52: Structure of hospital staff ranked in descending order by output per FTE



Source: NCZI, VfM

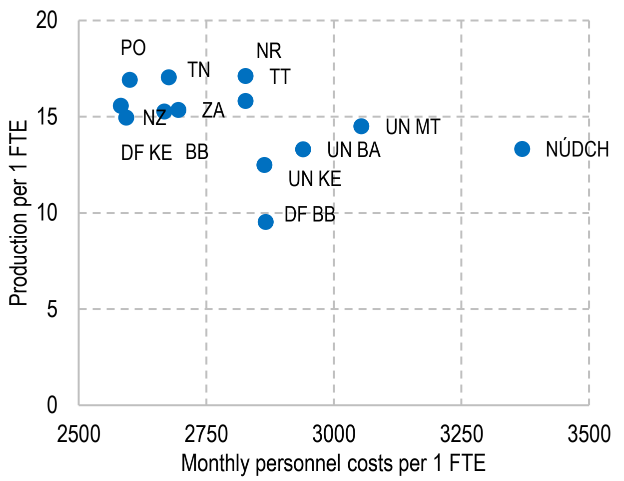
Productivity does not depend on either the size of production or the share of personnel costs in total costs, i.e. production technology. A slight relationship can be seen from a comparison of average personnel costs and production (both per 1 FTE). It appears that more expensive hospitals have slightly lower productivity.

Figure 53: Relationship between total production and production per 1 FTE according to effective case mix



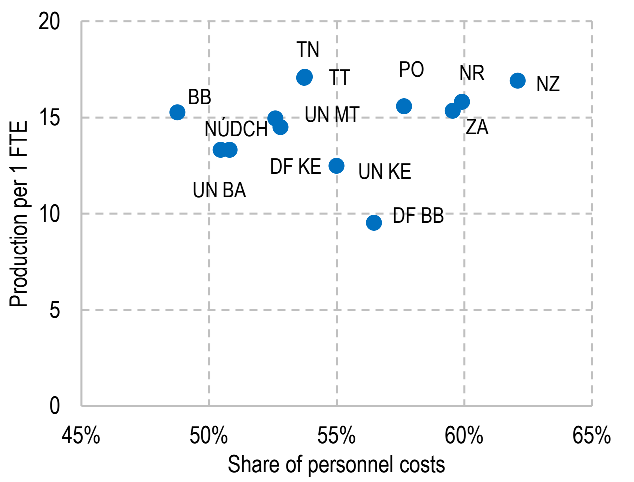
Source: NCZI, VfM

Figure 54: Relationship between personnel costs per 1 FTE and production per 1 FTE according to effective case mix



Source: NCZI, VfM

Figure 55: Relationship between the share of personnel costs in total costs and production per 1 FTE according to effective case mix



Source: NCZI, VfM

Regional differences in hospital wages are not as pronounced as differences in average wages for all employees. Differences in average regional wages for all employees are significant, reaching 133% of the national average in the Bratislava region and only 87% in the Prešov region. Bratislava hospitals (UN BA and NÚDCH) also have the highest average wages, driven mainly by nurses and practical nurses. However, the average wages of doctors are highest in the Prešov region, with Bratislava not even reaching the national average, even though the main tertiary and children's hospital is located in the region.

Table 18: Monthly wages in hospitals and in the economy by region, 2023, in EUR

Hospitals	BA region	TT region	ZA region	KE region	TN region	BB region	PO region	NR region	Average
Personnel costs	3,479	3,340	3,288	3,278	3,276	3,054	3,014	2,969	3,212
Employee	2,467	2,361	2,300	2,260	2,244	2,154	2,132	2,089	2,251
Doctor	4,380	4,649	4,730	4,415	4,536	4,448	4,754	4,452	4,546
Nurse	2,336	2,096	2,172	2,142	2,031	2,068	1,884	1,945	2,084
Practical nurse	1,697	1,542	1,500	1,560	1,459	1,418	1,389	1,372	1,492
Non-medical worker	1,394	1,384	1,309	1,390	1,254	1,275	1,209	1,224	1,305
Slovakia total	2,066	1,512	1,540	1,536	1,509	1,432	1,342	1,469	1,551

University II. degree	2,682	2,079	2,036	2,034	2,022	1,944	1,782	2,014	2,074

Source: NCZI, ŠÚSR, VfM

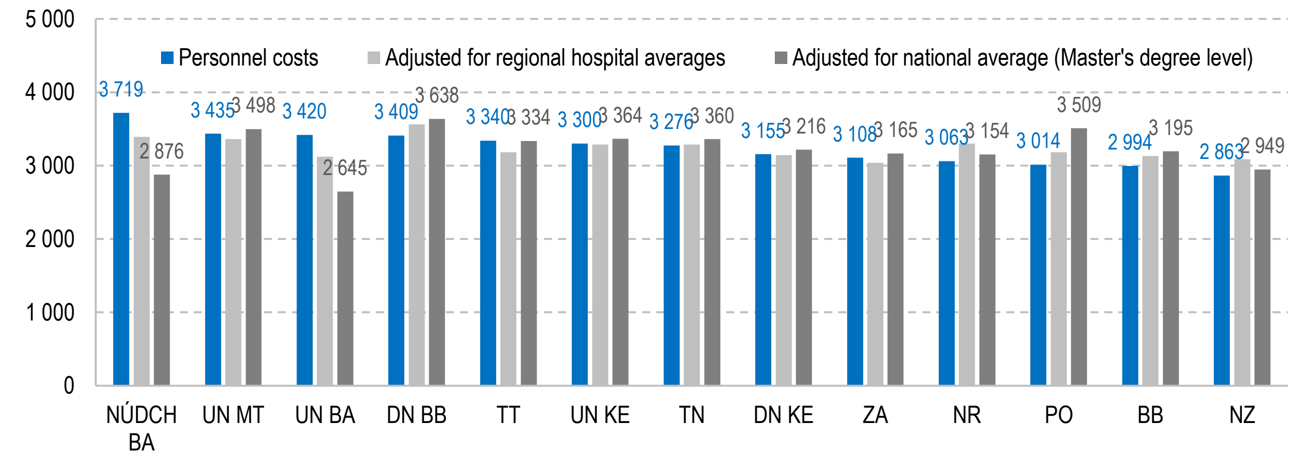
Table 19: Monthly wages in hospitals and in the economy by region, 2023, in indices (average = 100)

Hospitals	BA region	TT region	ZA region	KE region	TN region	BB region	PO region	NR region	Average
Personnel costs	108,3	104,0	102,4	102,1	102,0	95,1	93,8	92,4	100
Employee	109,6	104,9	102,2	100,4	99,7	95,7	94,7	92,8	100
Doctor	96,4	102,3	104,1	97,1	99,8	97,9	104,6	97,9	100
Nurse	112,1	100,5	104,2	102,8	97,5	99,2	90,4	93,3	100
Practical nurse	113,7	103,3	100,5	104,5	97,8	95,0	93,1	92,0	100
Non-medical worker	106,8	106,1	100,3	106,5	96,1	97,7	92,6	93,8	100
Slovakia total	133,2	97,5	99,3	99,0	97,3	92,3	86,5	94,7	100
University II. degree	129,3	100,2	98,2	98,1	97,5	93,7	85,9	97,1	100

Source: NCZI, ŠÚSR, VfM

After accounting for regional differences, the hospital rankings shift, though the results depend on the specific benchmark used. The most significant shifts occur when the average salary of all employees with a master's degree in the given region is used as the benchmark. Neither this approach nor the adjustment for regional variations in hospital salaries accounts for other critical factors, such as staffing structure, HNO hospital levels, or CKS-DRG peer groups. For instance, in the Nitra region, a Level 3 hospital (Nitra) and a Level 2 hospital (Nové Zámky) are adjusted identically despite their different classifications.

Figure 56: Personnel costs per FTE, adjusted for regional wage differences, 2023, EUR



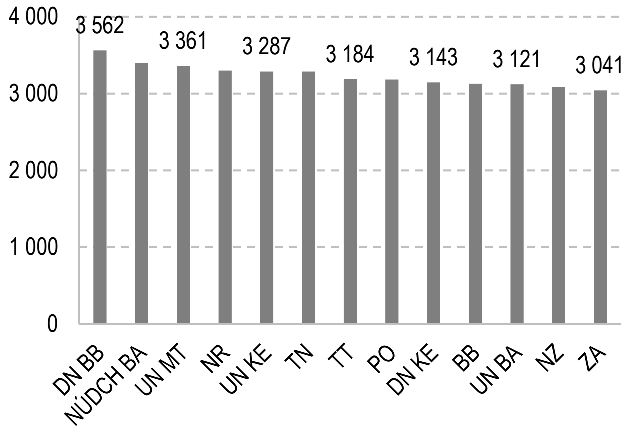
Source: NCZI, ŠÚSR, VfM

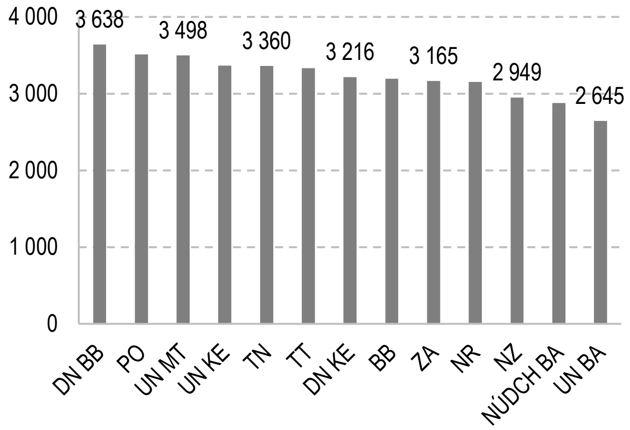
Therefore, depending on the metric used, NÚDCH is either the second most expensive or the second least expensive hospital per employee. DF BB is always among the most expensive and NZ among the least expensive. Regional differences can have an impact, especially for nurses and non-medical staff, but it is not easy to take them into account correctly. Therefore, the potential for inefficiency is derived from differences in productivity per FTE, rather than differences in personnel costs per FTE.

The impact of age on personnel costs per FTE is not clear. Although the coefficients for years of service will increased as of 2023, no clear relationship between the age structure (Figure 58) or the average age of doctors (Figure 59) and size has been demonstrated.

Figure 57: Adjusted personnel costs per 1 FTE, 2023, in EUR

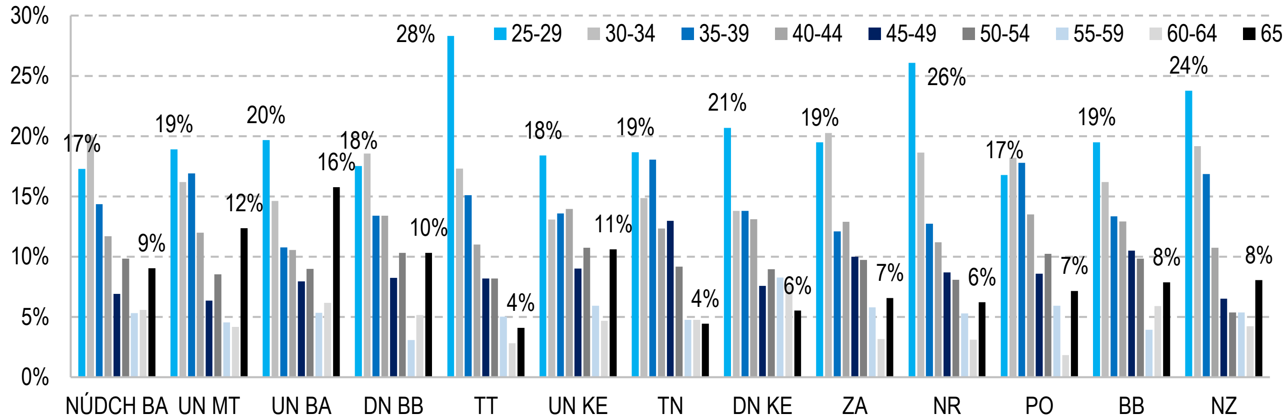
Regional average wage for hospitals	Average wage in the region





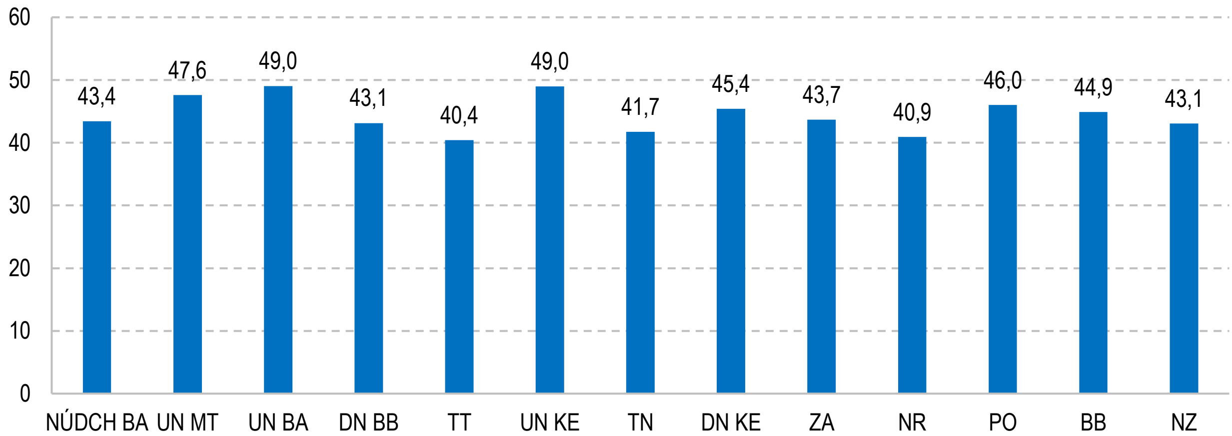
Source: NCZI, ŠÚSR, VfM

Figure 58: Age structure of doctors in 13 teaching and university hospitals, ranked by personnel costs per 1 FTE in Figure 56



Source: NCZI, ŠÚSR, VfM

Figure 59: Average age of doctors in 13 teaching and university hospitals, ranked by personnel costs per 1 FTE in Figure 56



Source: NCZI, ŠÚSR, VfM

Annex 5: Calculation of potential additional revenue from the leasing of premises for CT/MRI and laboratory services

Several hospitals in Slovakia have contracts with external suppliers for the provision of laboratory and equipment technology. However, the price for renting space to external providers varies between hospitals. The appendix provides an overview of the space and prices per m^2 from contracts between providers and hospitals, as well as additional income when adjusting rental prices and including income from % turnover.

Table 20: Valid contracts with providers of ancillary diagnostic services in 2024

	FNsP NZ	VOÚ	UN KE	FN PO	UNB total	UNB - Ružinov	UNB - Kramáre	UNB - Antolská	Total
CT/MR – m²	208	189		283 148	1067	255	442	370	**1894**
Laboratories – m²	694		182 308 89	238	1494	101 244 22	552	363 210	**3005**
Total m²	902	189	579	669	2561	623	994	943	**4899**
Price per m² – CT/MR (in euros)	271	293		146 282	418	327	447	446	
Price per m² – laboratories (EUR)	170		100 95 245	360	249	332 143 57	226	299 325	
Total contract amount – CT/MR (EUR)	56 233	55 379		41 152 41 609	445 779	83 443	197 201	165 135	**640 151**
Total contract amount – laboratories (EUR)	117 980		69 268	85 669	371 521	69 793	124 982	176 746	**644 437**

Source: CRZ, VfM

Table 21: Additional revenues of healthcare facilities in 2024, in EUR

	FNsP NZ	VOÚ	UN KE	FN PO	UNB total	UNB - Ružinov	UNB - Kramáre	UNB - Antolská	Total
Rent adjustment according to the highest price – CT/MR	18 053	24 544		85 936	24 507	24 507			**153 039**
Approximate additional revenue at 2.5% turnover – CT/MR*	39 532			11 623 61 303	208 661	97 920	78 782	31 959	**321 120**
Rent adjustment according to the highest price – laboratories	107 570		118 920		163 744	59 527	66 596	37 621	**390 235**

** Amounts recalculated according to 2022.* *Source: CRZ, IZA, VfM*

Annex 6: Annual reports of hospitals

Hospital annual reports should provide the public with sufficient information about their activities in a given year. One way to simplify the comparison of hospitals and thus facilitate public scrutiny is to define a uniform structure for these reports. The annex presents several examples of best practice; publishing these within a standardized framework would significantly increase transparency, enhance public scrutiny, and create the necessary pressure for hospitals to achieve better outcomes.

Information on inpatient healthcare in the annual report of the Teaching Hospital in Banská Bystrica

Tabuľka 4: Vybrané ukazovatele ústavnej zdravotnej starostlivosti

Odbornosť	Popis odbornosti	Počet lôžok	CMI	HP	Ošetrovacia doba	Obložnosť bez dopr.	POD
1001	vnútorné lekárstvo	47	0,90	1 982	13 321	86,11%	6,72
1002	infektológia	45	0,88	590	3 873	21,93%	6,56
1003	pneumológia a ftizeológia	24	1,01	553	3 874	43,70%	7,01
1004	neurológia	52	1,19	947	6 604	35,37%	6,97
1005	psychiatria	5	0,00	724	13 394	72,66%	18,50
1009	gynekológia a pôrodníctvo	83	1,04	1 829	8 298	28,05%	4,54
1010	chirurgia	80	1,78	2 865	16 150	53,05%	5,64
1011	ortopédia	42	2,39	1 083	6 664	43,39%	6,15
1012	urológia	30	1,60	1 950	6 318	57,14%	3,24
1013	úrazová chirurgia	51	1,77	1 635	9 042	48,83%	5,53
1014	otorinolaryngológia	15	1,03	558	2 251	40,31%	4,03
1015	oftalmológia	20	1,00	854	3 304	45,49%	3,87
1018	dermatovenerológia	28	0,83	466	3 295	31,96%	7,07
1019	klinická onkológia	66	0,97	2 217	11 392	46,48%	5,14
1025	anestéziológia a intenzívna medicína	13	5,82	153	1 109	30,28%	7,25
1031	hematológia a transfuziológia	24	1,74	536	6 037	67,82%	11,26
1037	neurochirurgia	25	2,73	737	5 592	53,59%	7,59
1038	plastická chirurgia	15	1,02	795	2 858	52,20%	3,59
1046	algeziológia	10	0,78	192	677	18,60%	3,53
1051	neonatológia	16	0,38	812	3 542	63,37%	4,36
1063	nefrológia	20	0,98	1 143	6 809	96,08%	5,96
1068	cievna chirurgia	11	1,94	678	3 294	75,36%	4,86
1070	maxilofaciálna chirurgia	9	1,69	689	2 694	78,02%	3,91
1196	JIS interná	8	4,17	131	1 338	62,67%	10,21
1201	JIS neurologická	6	1,62	181	487	49,50%	2,69
1203	JRSN - jednotka resuscitačnej starostlivosti o novorodencov	14	6,51	210	4 343	67,75%	20,68
1205	dlhodobochorí	21	2,91	246	6 989	61,98%	28,41
1207	transplantačné	12	9,63	30	632	13,26%	21,07
1216	hepatológia	30	1,51	977	7 699	70,76%	7,88
1306	klinické pracovné lekárstvo a klinická toxikológia	9	0,69	280	1 445	43,99%	5,16
1625	JIS centrálna	8	4,48	40	474	54,21%	11,85
1631	JIS hematologická	4	8,17	39	937	65,55%	24,03
1637	JIS neurochirurgická	5	3,55	112	930	88,44%	8,30
1707	JISN - jednotka intenzívnej starostlivosti o novorodencov	3	0,93	99	784	54,06%	7,92

Data on revenues and hospitalizations by health insurance companies published by the University Hospital in Martin and St. Michael's Hospital

St. Michael's Hospital

Prehľad výkonov za obdobie 01-12/2023 v €

Všeobecná ZP, a.s.

Obdobie	Zmluvný limit	Vykázané limit.výkony	Uznané limit.výkony	Hradené limit.výkony	Vykázané nelimit.výk.	Uznané nelimit.výk.	Vykázané celkom	Uznané celkom	Hradené celkom	Nadlimit uzn.-hrad.
A	B	C	D	E	F	G	H	CH	I	D-E
1/23	5 391 703	4 687 237	4 477 838	4 634 083	1 312 303	1 363 862	5 999 540	5 841 701	5 997 946	-156 245
2/23	5 391 703	5 937 166	5 709 798	4 720 370	1 517 528	1 525 443	7 454 695	7 235 241	6 245 813	989 428
3/23	5 391 703	6 937 942	6 303 221	4 664 907	1 742 261	1 751 532	8 680 203	8 054 753	6 416 440	1 638 313
4/23	5 391 703	5 610 892	4 689 611	4 190 109	1 553 886	1 595 666	7 164 777	6 285 277	5 785 775	499 501
5/23	5 391 703	6 901 658	6 502 113	4 440 070	1 695 474	1 741 080	8 597 132	8 243 193	6 181 149	2 062 043
6/23	10 954 483	6 979 242	6 337 853	10 260 455	1 654 761	1 668 208	8 634 003	8 006 061	11 928 663	-3 922 602
7/23	6 325 801	5 787 289	4 881 246	5 158 512	1 380 049	1 383 406	7 167 339	6 264 652	6 541 918	-277 266
8/23	6 325 801	5 985 494	5 428 028	5 472 936	1 572 841	1 607 811	7 558 335	7 035 839	7 080 747	-44 908
9/23	6 325 801	6 224 318	6 306 668	6 248 023	1 640 839	1 666 957	7 865 157	7 973 626	7 914 980	58 645
10/23	6 221 781	6 681 144	5 359 208	4 662 843	1 839 608	1 860 360	8 520 752	7 219 568	6 523 203	696 365
11/23	6 221 781	6 537 781	6 422 759	6 050 935	1 876 860	1 870 851	8 414 641	8 293 609	7 921 786	371 824
12/23	6 221 781	5 849 487			1 715 087		7 564 574			
Celkom	75 555 744	74 119 649	62 418 342	60 503 243	19 501 497	18 035 177	93 621 146	80 453 519	78 538 420	1 915 099

St. Michael's Hospital

sledované obdobie	*počet lôžok*	*VšZP*		*Dôvera*		*Union*		*Iní*		*SPOLU*
		hospitalizácie spolu	*vyjadrenie v percentách*	*hospitalizácie spolu*	*vyjadrenie v percentách*	*hospitalizácie spolu*	*vyjadrenie v percentách*	*hospitalizácie spolu*	*vyjadrenie v percentách*	
2022	187***	3 565	69.83%	1 198	23.47%	336	6.58%	6	0.12%	**5 105**
2021	181**	3 186	72.10%	987	22.34%	238	5.39%	8	0.18%	**4 419**
2020	208*	3 663	72.85%	1 050	20.88%	312	6.21%	3	0.06%	**5 028**

Information on employees in the annual report of Kysucká Hospital

Tabuľka 69 Vývoj evidenčného počtu zamestnancov

Kategória	2019	2020	2021	2022	2023
Lekári	98	100	107	105	124
Farmaceuti	7	7	8	8	7
Sestry	252	256	250	249	245
Pôrodné asistentky	31	34	30	33	35
Laboranti zdravotnícki	36	38	37	36	35
Laboranti farmaceutickí	6	8	8	7	7
Laboratórni diagnostici	4	4	4	6	7
Logopéd	0	0	1	1	1
Nutriční terapeuti (asistenti výživy)	5	4	4	6	4
Zdravotnícki záchranári	8	3	2	2	2
Fyzioterapeuti	20	20	19	18	19
Rádiologickí technici	15	17	18	19	17
Maséri	4	4	5	5	4
Praktické sestry - asistenti	40	54	63	67	79
Technik pre zdravotnícke pomôcky	1	0	0	0	1
Verejný zdravotník	1	2	1	1	1
Pomocní zam. v zdrav.	31	31	29	28	16
Sanitári	93	103	104	108	118
Zdravotníci pracovníci spolu	***652***	***685***	***690***	***699***	***722***
THP s VŠ	7	8	10	9	12
THP bez VŠ	28	27	30	27	27
Rob. a prev. zamestnanci	184	176	176	170	170
Celkom	**871**	**896**	**906**	**905**	**931**

Tabuľka 71 Priemerná mesačná mzda

v €

Kategória	2019	2020	2021	2022	2023
Lekári	3 130,21	3 530,43	3 673,37	3 637,24	4 220,59
Farmaceuti	1 924,70	2 057,93	2 229,02	2 248,06	2 875,35
Sestry	1 170,56	1 221,53	1 423,59	1 457,74	1 857,04
Pôrodné asistentky	1 102,91	1 184,43	1 216,17	1 306,58	1 627,79
Laboranti zdravotnícki	924,96	1 008,49	1 110,02	1 223,97	1 642,99
Laboranti farmaceutickí	977,79	997,28	1 091,34	1 155,16	1 475,43
Iní zdr.prac.-laboratórni diagnostici	2 336,78	2 423,08	2 622,48	2 550,48	2 603,40
Iní zdr.prac.-logopéd	0,00	0,00	1 342,05	1 241,10	1 603,14
Nutriční terapeuti (asistenti výživy)	862,06	853,81	1 059,79	990,19	1 265,18
Zdravotnícki záchranári	1 262,76	1 236,55	1 091,60	1 003,89	1 175,05
Fyzioterapeuti	844,21	826,83	984,47	1 047,62	1 262,77
Rádiologickí technici	1 528,41	1 578,27	1 600,83	1 734,23	2 183,64
Maséri	795,88	843,51	994,47	985,99	1 249,21
Praktické sestry - asistenti	849,72	868,32	1 077,03	1 115,94	1 188,22
Technik pre zdrav. pomôcky	952,81	512,24	0,00	0,00	1 218,31
Verejný zdravotník	844,57	888,43	963,42	1 286,20	1 452,47
Pomocní prac. v zdrav.	635,49	696,26	925,60	888,15	965,14
Sanitári	697,68	754,30	929,05	891,60	1 065,80
Zdravotnícki zam.spolu	**1 316,46**	**1 411,64**	**1 592,95**	**1 606,05**	**1 718,42**
THP	900,73	958,26	1 184,69	1 210,39	1 377,70
Rob. a prev. zamestnanci	591,51	633,89	748,55	746,84	835,15
Celkom	**1 155,64**	**1 239,31**	**1 412,04**	**1 422,98**	**1 657,22**

Information on supervisory boards and their members included in the annual reports of NHS hospitals

NAME	JOB TITLE	PERIOD	2022/23					
EXECUTIVE DIRECTORS			Salary (bands of £5000) £000	Expense payments (taxable) Total to the nearest £100	Performance pay and bonuses (bands of £5000) £000	Long term performance pay and bonuses (bands of £5000) £000	All pension-related benefits (bands of £2500) £000	Total (bands of £5000) £000
Ms Jacqueline Totterdell	Group Chief Executive	from 1st May 2017	150-155 *(Note 1)	0	0	0	0 *(Note 1)	150-155
Mr Andrew Grimshaw	Chief Financial Officer and Deputy Chief Executive	(CFO) from 19th June 2017 and (Deputy CEO) from 25th April 2019 to 31st Jan 2022.	105-110 *(Note 1)	0	0	0	0 *(Note 1)	105-110
Mr Paul Da Gama	Chief People Officer	from 8th February 2021	75-80 *(Note 5)	1200	0	0	42.5-45	120-125
Mr Stephen Jones	Chief Corporate Affairs Officer	from 5th March 2018	65-70 *(Note 5)	0	0	0	32.5-35	95-100
Dr Richard Jennings	Chief Medical Officer	from 19th November 2018	100-105 *(Note 5)	0	0	5-10	52.5-55	165-170
Kate Slemeck	Managing Director – St George's	from 3rd February 2022	195-200 *(Note 6)	0	0	0	0-2.5	195-200
Arlene Wellman	Group Chief Nursing Officer	from 1st February 2022	75-80	0	0	0	0 *(Note 4)	75-80
James Marsh	Group Deputy Chief Executive Officer	from 1st February 2022	125-130	0	0	0	0 *(Note 4)	125-130
NON-EXECUTIVE DIRECTORS								
Ms Gillian Norton	Group Chairman (Chair Board/ Council and Nominations and Remuneration Committee, Trust Board and Council of Governors)	from 1st April 2017	55-60	0	0	0	0	55-60
Ms Ann Beasley	Non-executive Director (Chair of Finance and Investment Committee and Senior Independent Director).	NED from 13th October 2016. Senior Independent Director from 1st April 2021 to 31st May 2021	10-15	0	0	0	0	10-15
Mr Stephen Collier	Non-executive Director (Chair Workforce and Education Committee)	NED from 13th October 2016. Senior Independent Director from 1st June 2021 to 31st March 2022	10-15	0	0	0	0	10-15
Mr Timothy Wright	Non-executive Director	from 25th September 2017	10-15	0	0	0	0	10-15
Peter Kane	Non-Executive Director	from 1st October 2021	10-15	0	0	0	0	10-15
Mr Andrew Murray	Non-executive Director (Chair of Quality Committee)	from 23rd January 2023* (Note 7)	0-5	0	0	0	0 *(Note2)	0
Chiew Yin Jones	Associate Non-executive Director	from 1 March 2023* (Note 7)	0-5	0	0	0	0 *(Note2)	0
Professor Jennifer Higham *(Note 3)	Non-executive Director	from 1st November 2015 (see note 1)	0	0	0	0	0	0
LEAVERS								
Dr Pui-Ling Li	Associate Non-executive Director	from 13th January 2020 – 12 January 2023 (see note 8)	5-10	0	0	0	0 *(Note 8)	5-10
Professor Dame Parveen Kumar	Non-executive Director (Chair of Quality & Safety Committee)	from 13th January 2020– 12 January 2023 (see note 8)	10-15	0	0	0	0 *(Note 8)	10-15

Board of Directors	Appointed Role	Eligible Period	Actual/Eligible Attendance
Gillian Norton	Chairman	1 April 2022 – 31 March 2023	6/6
Ann Beasley	Non-Executive Director	1 April 2022 – 31 March 2023	5/6
Stephen Collier	Non-Executive Director	1 April 2022 – 31 March 2023	6/6
Prof. Jenny Higham	Non-Executive Director	1 April 2022 – 31 March 2023	6/6
Peter Kane	Non-Executive Director	1 April 2022 – 31 March 2023	5/6
Dame Parveen Kumar	Non-Executive Director	1 April 2022 – 12 January 2023	4/5
Dr Andrew Murray	Non-Executive Director	23 January 2023 - 31 March 2023	0/6
Tim Wright	Non-Executive Director	1 April 2022 – 31 March 2023	4/6
Voting Executive Directors			
Jacqueline Totterdell[1]	Nursing & Midwifery	1 April 2022 – 31 March 2023	6/6
Andrew Grimshaw[2]	Allied Health Professionals	1 April 2022 – 31 March 2023	6/6
Arlene Wellman	Clinical & Dental	1 April 2022 – 31 March 2023	
Dr Richard Jennings[2]	Non-Clinical	1 April 2022 – 31 March 2023	5/6
Non-Voting Non-Executive Directors			
Chiew Yin Jones	Associate Non-Executive Director	1 March 2023 – 31 March 2023	1/1
Pui-Ling Li	Associate Non-Executive Director	1 April 2022 – 12 January 2023	4/5
Non-Voting Executive Directors			
Andrew Asbury	St. George's University of London	16 January 2023 – 31 March 2023	1/1
Stephen Jones2	Healthwatch Merton	1 April 2022 – 31 March 2023	6/6
Paul Da Gama2	South West London CCG	1 April 2022 – 31 March 2023	5/6
James Marsh	Kingston University	1 April 2022 – 31 March 2023	4/6
Kate Slemeck	Wandsworth Council	1 April 2022 – 31 March 2023	6/6

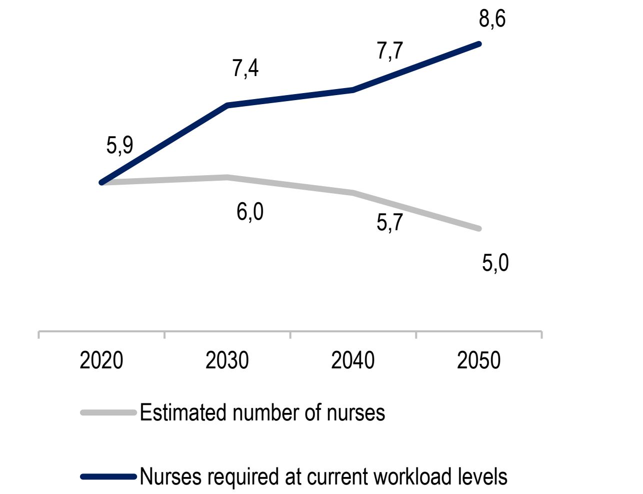
Annex 7: Forecast of nurse shortages in the Bratislava region

According to BCG[63] , the European benchmark in inpatient care is 19 patients per nurse, but in the Bratislava Region (hereinafter referred to as BSK) alone, there are currently up to 27 patients per nurse. Driven by ageing population - a trend Slovakia cannot avoid - and technological advances, the demand for healthcare, including inpatient care, is set to increase.

BCG estimates that if the current (understaffed) standard is maintained, there will be a shortage of 3,600 nurses in the Bratislava region alone by 2050. To reach the European average, this deficit will rise to 10,600 nurses. Without moderating the demand for healthcare services, it will be very difficult to maintain at least the current ratio of nurses to hospitalised patients.

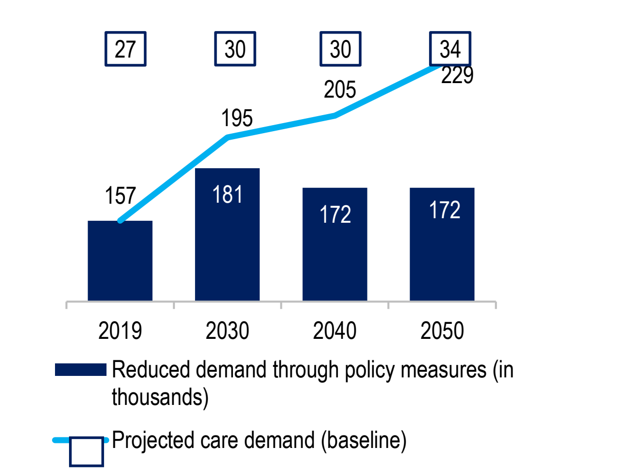
If the demand for inpatient care cannot be reduced and the number of nurses does not increase, one nurse in the Bratislava region would have to care for up to 46 patients in 2050, which is unrealistic. For one nurse to care for 34 patients, the number of hospitalizations would have to be reduced from an estimated 229,000 to 172,000 (based on the expected development of the number of nurses).

Figure 60: Nurse shortage in the BSK to cover the current workload (by year, in thousands)



Source: Boston Consulting Group, IZA

Figure 61: Forecasted patient volume in the BSK (by year, in thousands) and patients per nurse when demand changes



Source: Boston Consulting Group, IZA

In addition to making the profession more attractive and attracting missing nurses, it is also necessary to significantly moderate the demand for inpatient healthcare. This is estimated to be approximately 20 to 30% of the projected demand. Without moderating demand, the number of patients per nurse would increase even if the current number of nurses were maintained. Measures on the supply side, such as reorganising processes and redistributing work responsibilities to lower-level healthcare or non-healthcare staff wherever possible, will also be necessary (see section 5.1 for more details).

It is necessary to remove all obstacles that prevent the strategic utilization of capacities throughout the healthcare system. This can be achieved, for example, by increasing the workforce of outpatient doctors and strengthening the outpatient sector as a whole, including the competences of general practitioners. Furthemore, the construction of modern hospitals can contribute to the modernisation of processes and improved work efficiency.

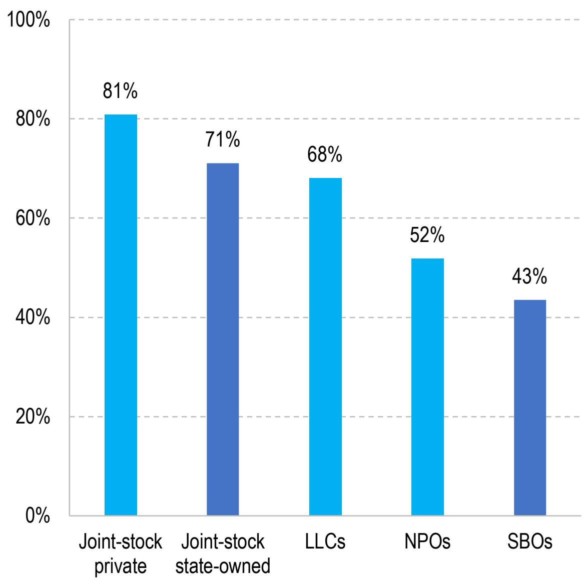
Demand for inpatient care can also be moderated "directly". There are several good examples from abroad, such as the introduction of a medical telephone line for home triage and advice (e.g. the British NHS 111 line). Patient triage also needs to be strengthened at the level of emergency medical service operations centres, outpatient clinics and emergency rooms. It is also necessary to improve cooperation with the social system and the integration of modern technologies and telemedicine.

[63] In 2023, the international consulting company BCG prepared a study for the MoH SR on the concept of inpatient care in the Bratislava Self-Governing Region.

Annex 8: Investment gap compared to private hospitals and the Czech Republic

The poor condition of public hospitals is also illustrated by a comparison of the value of their assets with those of private hospitals. The investment gap calculated in this way amounts to EUR 1.68 billion and has not decreased in the last five years. The calculation based on the residual value of real estate shows how much the state should invest in infrastructure renewal (through reconstruction or construction) to bring it up to the level of private hospitals. If public hospitals were to renovate their assets (from 43% of their value) to the level of private hospitals (81% of their value), they would have to make a one-off investment of EUR 1.68 billion (more detailed information on the calculation is provided in Box 25).

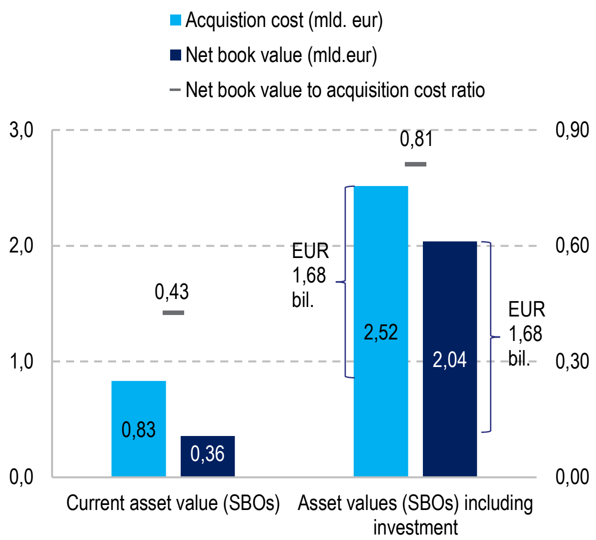
Figure 62: Ratio of residual and acquisition value of hospital buildings by form of ownership (2018–2022)



Note: PRO – semi-budgetary and budgetary organisations; n.o. – non-profit organisations

Source: Register of Financial Statements, VfM

Figure 63: Required increase in the value of SBOs assets by EUR 1.68 billion to achieve the ratio of the residual and acquisition value of private hospitals (81%)



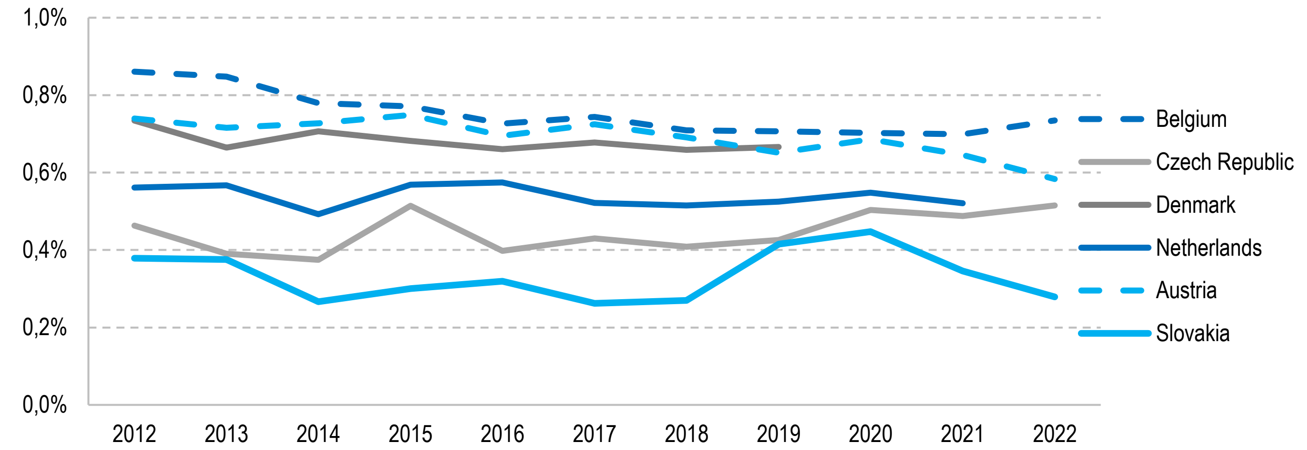
Source: Register of Financial Statements, VfM

Box 25: Investment gap calculation using the value of real estate assets

Alternative approach to quantifying the size of the necessary investments involves comparing the value of the real estate assets of public and private hospitals. The calculation is based on the ratio of the residual (net) value of assets to the acquisition value (gross) over five years (2018 to 2022) from the financial statements. Hospitals that did not have consistent data throughout the entire period under review were excluded. State-owned joint-stock companies (whose shareholder is the MoH SR) were also excluded due to their different method of financing capital expenditure compared to other state hospitals. In their case, funds are not allocated from the state budget. In state-owned joint-stock companies, the ratio of residual value to acquisition value of assets is 71%, while in private companies it reaches 81%. Semi-budgetary and budgetary organisations achieve an average of only 43%. The residual value of the assets of limited liability companies is lower than that of private joint-stock companies due to the small number of hospitals in the sample, which includes not only commercially oriented hospitals but also church and railway hospitals. The calculation is based on the addition of new assets and does not take into account the gradual disposal of old assets, which would occur in practice during renovation, and may therefore be overestimated. At the same time, the value of assets is only revalued in selected cases, which may lead to an underestimation of the estimated amount of debt. The impacts were not included in the calculation as they could not be accurately estimated.

To prevent the investment gap from widening further relative to the Czech Republic, Slovakia would need to invest at least EUR 100 million more per year in healthcare than its long-term average. Investment activity across countries can be compared through gross capital formation[64] , which shows how much capital per employee was added per year in the public and private sectors combined. The investment gap[65] compared to the Czech Republic, at EUR 100 million, has not changed significantly since 2014 (EUR 111 million; HPI). When expressed as a share of the country's GDP, the gap is EUR 142 million[66] . Compared to the Netherlands or Denmark, the gap reaches up to EUR 302 million per year. These figures show how much Slovakia would need to invest annually to prevent the gap from widening, but they do not take into account the historical investment backlog of hospitals.

Figure 64: Gross fixed capital formation in healthcare as a share of GDP



Source: Eurostat

Before determining the specific amount needed to finance the investment backlog, hospitals should identify investment priorities and make better use of available resources. The investment backlog of hospitals is the result of long-term neglect of investment and maintenance. The debt cannot be resolved by a one-off increase in funding for hospitals and will require a long-term systematic solution. A key part of resolving the historical backlog is investment planning, which identifies the ministry's priorities for several years ahead, including the estimated amount of investment required. At the same time, it is necessary to increase the success of hospitals in using already available resources (ESIF, POO).

[64] Gross capital formation consists of gross fixed capital formation, inventory formation and valuables. Gross fixed capital formation captures how much assets a healthcare provider has acquired over a specified period of time, excluding depreciation. It includes assets that are used for more than one year. It includes investments in buildings, technical equipment and software or similar products.

[65] Data from the last five available years (2018–2022) have been adjusted for changes in inventories and purchasing power parity. Low values per employee may indicate not only a low level of investment but also overemployment in the sector. In the case of Slovakia, the ratio of healthcare professionals to the population is lower than in the Czech Republic or Austria, so it can be assumed that overemployment is not the reason.

[66] Calculation based on GDP eliminates several distorting effects of nominal expression (inflation, purchasing power) and takes into account the size of the economy. In Slovakia, capital in healthcare has increased by an average of 0.35% of GDP over the last five years, compared to 0.47% of GDP in the Czech Republic.