Slovakia Will Be Facing a Shortage of Health Professionals

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This paper exemines the demographic projections for Slovakia up to 2030, focusing on the potential shortages of healthcare professionals. By considering factors such as new graduates, retiring doctors, and migrating doctors, we predict a significant growth in the 65+ years population that surpasses the number of available doctors and nurses. Specifically, the number of nurses is expected to decline, posing challenges to healthcare accessibility.

To tackle this issue, we propose two key solutions. Firstly, we advocate for loosening regulations to attract foreign health professionals. By embracing international talent, Slovakia can bridge the workforce gap. Additionally, we emphasize the need for policies that increase the retention rate of healthcare professionals, as data suggests that only 40% of nursing graduates become professional nurses.

Introduction

The number of nurses and doctors in Slovakia is far from ideal, but the country's health system is able to cope with the situation at the moment. However, like many other countries, Slovakia will face a significant demographic change as the oldest age group's share in the total population increases. This has two implications – firstly, the number of people requiring an above-average amount of care will increase; approximately half of the total costs the health system accrues over an individual's life are incurred after his/her 65th birthday (Alemayehu & Warner, 2004). Secondly, health professionals will age, too. Consequently, the supply of healthcare services will decrease.

The problem has been discussed for some time now. There is, however, a difference between identifying a problem and determining its scale. To achieve the latter, Institute of Economic and Social Studies (INESS) created a prediction model to illustrate how the number of health professionals (nurses and doctors) will evolve in the upcoming years. We seek to demonstrate the gravity of the situation and call for systemic change in the health system.

Methodology

Our projection assumes a scenario where policies remain unchanged. Thus, we do not account for the possibility of policy changes in the health system, which could influence the value of variables such as the number of medical/nursing graduates, the retirement of health professionals, migration, departure to other sectors, etc. Because of this and other limitations, we prepared three scenarios – an optimistic, neutral, and pessimistic scenario – to cover the maximum scope of the possible reality.

The starting point for our analysis constituted data collection about the number of medical doctors and nurses (with university degrees) in the Slovak healthcare system. The dataset segments each profession into six age groups (20–29; 30–39; 40–49; 50–59; 60–64; 65+), indicating the number of professionals in each age group. An updated version of the dataset is published annually by the Slovak National Health Information Centre (NCZI).

To build the prediction model, we identified a set of key variables. These varied slightly for each profession, mainly due to what data (and in what form) were available. Where possible, we used values based on data outputs and/or the statements of relevant actors and institutions. In some cases, however, the necessary data were unavailable or available in poor quality. In such cases, we used estimates. We believe that by modelling three different scenarios, we mitigate possible deviations from reality.

Three scenarios entail three models with three different values for each variable. The two following tables describe the introduced variables and the values used in each scenario for medical doctors and nurses separately.

Table 1: Values used for each variable in the individual scenarios; doctors

	Pessimistic scenario	Neutral scenario	Optimistic scenario
Graduates who become medical doctors	85%	90%	95%

International students who stay in Slovakia after graduating	5%	10%	15%
Slovak graduates returning from abroad after graduating (number)	10	25	40
Doctors in the 65+ age group who retire each year	25%	20%	15%
Migration (number)	–50	0	+50

Table 2: Values used for each variable in the individual scenarios; nurses

	Pessimistic scenario	Neutral scenario	Optimistic scenario
Retention of graduates in the system	40%	56%	60%
Slovak graduates returning from abroad (number)	0	10	20
Nurses in the 65+ age group who retire each year	50%	45%	40%
Migration (number)	–50	0	+50

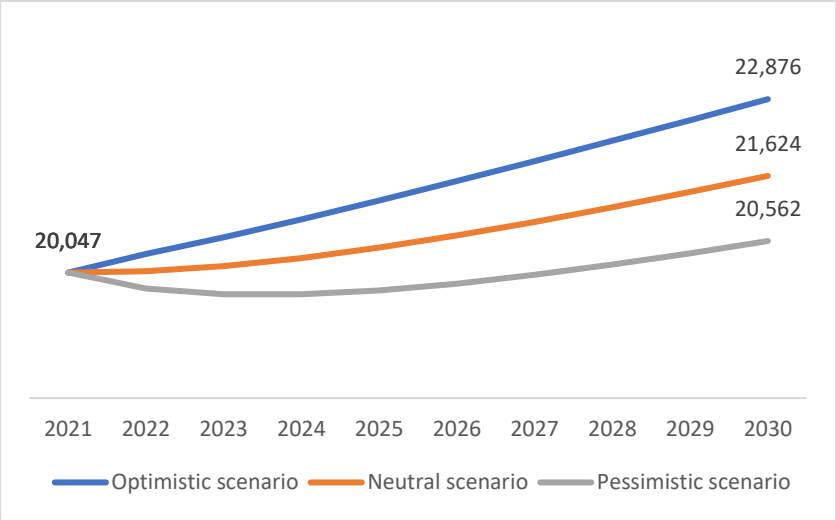
We applied the variables described above to the age-structured data about the number of health professionals. The percentage of professionals that retire each year was used as a multiplier for the 65+ age group. The migration variable has been applied to the total number of professionals, not a specific age group. We also assumed a uniform distribution within each age group – thus, each year, 10% (or 20% for the 20–29 age group for doctors and for the 60–64 age group for both professions) of the previous year's number of health professionals moved "upwards."

Lastly, based on data from the 2010–2022 period, we calculated the average number of graduates from the relevant faculties (medicine and nursing). We then adjusted this number by the variables described above. The resulting number constitutes the number of graduates that join the healthcare system every year.

The situation will be worse, despite an increase in the number of doctors…

The number of medical doctors in Slovakia has been gradually increasing since 2009 (from around 18,000 in 2009 to around 20,000 in 2021). All three scenarios assume a continuation of this trend and thus an increase in the number of doctors.

Figure 1: Scenarios for the development of the number of doctors in Slovakia until 2030



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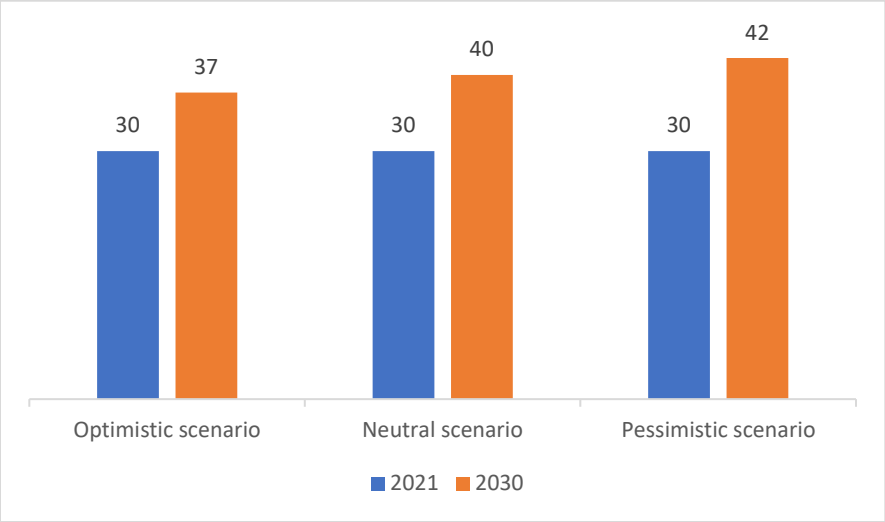
Even in the pessimistic scenario, the number of doctors would increase by about 500 between 2021 and 2030. The neutral scenario predicts an increase of almost 1,600 doctors. And lastly, if the assumptions used to model the optimistic scenario are met, there would be almost 3,000 additional doctors.

While this might appear to be a promising prospect, the situation is more complicated. Even though Slovakia's population in terms of total numbers is not expected to change dramatically until 2030, the share of people aged 70 and over will grow by about 4.5 percentage points (from 11% of the population to 15.5%), as the size of the group will increase from 606,545 to more than 850,000 individuals. Consequently, the number of individuals aged 70 and over per medical doctor will increase compared to the status quo, regardless of the scenario.

Figure 2: Scenarios for the number of individuals aged 70 and over per doctor in 2030



The implications are rather straightforward – even under the most favourable circumstances, the amount of work per doctor in 2030 will be higher than it is today. In an optimistic scenario, the number of patients in the analysed age group per doctor will increase by "only" about 23%. The neutral scenario assumes a one-third increase (33%), and the pessimistic scenario predicts a 40% increase. Ultimately, the doctors' workload will increase in the upcoming years, making healthcare less accessible.

…but the real crisis will be caused by the nurses' numbers

The situation is, however, even grimmer in the case of nurses, as none of the scenarios assumes a higher number of nurses in 2030 than in 2021. In the best scenario, Slovakia will lose about 1,600 nurses, representing a decrease of about 5%. In the neutral scenario, the number of nurses will decrease by up to about 2,200 (a decrease of about 7.1%). And in the pessimistic scenario, Slovakia will lose almost 3,600 nurses, which corresponds to a decrease of about 11.5%. Naturally, this decline will be reflected in the number of patients aged 70 and over per nurse.

Figure 3: Scenarios for the number of nurses in Slovakia by 2030

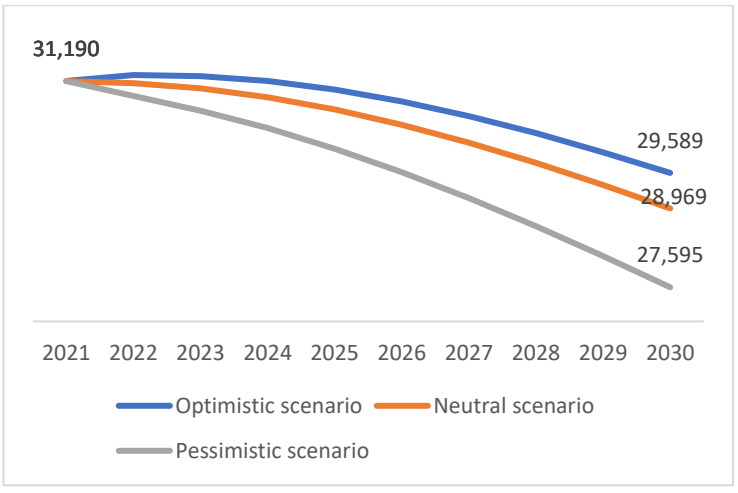
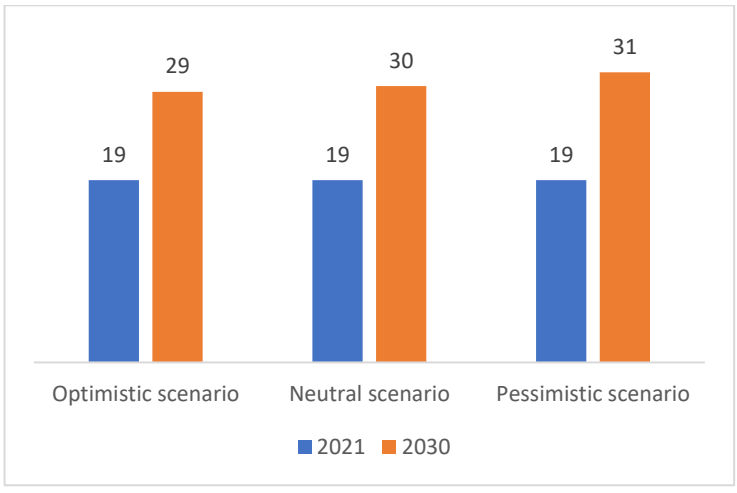


Figure 4: Scenarios for the number of individuals aged 70 and over per nurse in 2030



As in the case of doctors, the amount of work per nurse will increase. In the optimistic scenario, an increase of 53% is expected in terms of patients aged 70+ per nurse. If the assumptions for the neutral scenario materialise, we will see an increase of just under

58%. And in the pessimistic scenario, we will see the most significant increase – more than 63%. Ultimately, every scenario predicts a situation where nurses can devote less time to patients, resulting in less accessible healthcare in Slovakia.

Conclusion and recommendations

Based on the analysis, two conclusions can be drawn. Firstly, due to demographic changes, the average medical doctor will have to do more work in 2030, despite an increase in the number of doctors. This is likely to result in less accessible healthcare. Secondly, the situation will be even worse in the case of nurses, since this profession will see a decline in absolute numbers. Consequently, the decline in healthcare accessibility is likely to be even more pronounced.

Several policies could improve the situation. Slovakia needs to deregulate the health sector to attract foreign doctors, modify the ratio of international and Slovak medical students, and/or increase the number of medical students (although this option's potential is quite limited). To increase the number of nurses, Slovakia must, first and foremost, increase the retention rate of nurses, since, according to some sources, only 40% of nursing graduates become nurses. Additionally, efforts should be made to increase the attractiveness of nursing to make it more appealing to more people.

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Lastly, Slovakia could also implement policies influencing the demand for healthcare. Strategies can range from introducing fees to prevent over-consumption to emancipating patients and transferring a part of the care to families and/or communities. Regardless of the specific form, systemic changes are needed to make the Slovak health system sustainable.

References

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