GUEST ARTICLE ON LATEST DEVELOPMENTS ON HEALTH WORKFORCE PLANNING AND POLICY

Managing health workforce mobility in Hungary - Policy measures to retain health professionals

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Background

Health workforce (HWF) mobility - moving within the European Union - and migration - moving in and out of the European Union - are considered as global phenomena. Crossing borders in the European Union (EU) is even better facilitated, as the knowledge and skills are harmonized within the EU by the Directive on mutual recognition of qualifications (2005/36/EC) in the sectoral health professions, and therefore could be easily mobilised. The member states of the EU often face significant inflows and outflows of health professionals on a system level, as mobility is fostered within the EU internal market.

Some countries can be identified as sending countries that experience high outflows and shortage of health professionals (e.g., Romania or Bulgaria), and some as recipient countries that highly rely on foreign health workers (e.g., the UK, Germany, or the Scandinavian countries). The main trends in HWF mobility are the following: from East to West, from South to North, and cross-border movements are very frequent, particularly in countries with high proximity e.g., Benelux countries.

Hungary is recognised to be one the major sending countries in the EU (Buchan et al. 2014). A constant shortage of medical doctors and nurses was recognized around 2010, a few years after the EU accession in 2004.

When considering and sustaining the national healthcare system and HWF, policy makers require a high amount of information to build up their strategy for managing a resilient HWF (Kovacs et al. 2019). In the EU health is under national authority; therefore, national level decision makers establish processes and regulations to tackle national issues. Political commitment is inevitable to implement a national HWF strategy and initiate, implement and

realise influential actions and effective health policy interventions (Kovacs et al. 2016). Therefore, political commitment is one of the essential factors in planning, thus the engagement of health policy and decision makers is necessary in order to manage HWF mobility. Most of the time, HWF issues only come into the centre of the attention of decision makers when a significant imbalance or shortage of professionals appears and it risks the sustainability of care. National health governance should keep HWF issues among its top priorities, continuously monitor and improve the situation and be responsive to challenges. Health policy in Hungary took some significant measures in the last decade to manage health workforce mobility, to retain health professionals, and to introduce wage increasments and scholarship programmes as part of a replenishment strategy (Eke et al. 2016, Kovacs et al, 2019, Páva-Bélteki 2018).

Objectives

The first purpose of this study was to investigate the national data on migration potential, profiles of the medical professions affected most significantly by the Hungarian HRH mobility process. The second goal was to present statistics on policy measures in order to get an overview on the policy interventions focusing on retention and mitigating health workforce outflow in the last decade.

Methods

National data on migration potential for the medical workforce include an age distribution analysis of the requests for degree certificate issued by the National Healthcare Services Centre (ÁEEK) was carried out between years of 2010-2017. Further data was gathered from the Annual reports on the human resources for health situation of health care sector 2010-2018 and the Human Resource Monitoring System. Human Resource Monitoring System in the Health Sector (HRM) is regulated by the Health Act and operated by the National Healthcare Service Center. HRM data warehouse contains the registry data and is the most up-to-date and reliable data on health workforce in Hungary. HRM data is used for the sectoral decision-making and monitoring the impact of the introduced measures.

In the first step we analysed **national data on in- and outflow**, namely the new graduates and the number of recognized diplomas on the inflow, and migration potential and age distribution of practicing medical doctors in the outflow. These two outflow data could provide an estimate on the health professionals leaving the country or retiring in the future. The numbers of all doctors who applied for a verification certificate between 2010 and 2018 is a

proxy indicator on health workforce mobility. It shows the migration potential, the intention to leave the country with the good standard certificate that is required in all Member States in order to get licenced to practice. Although proxy indicators are available on outflow, precise numbers on realised mobility are challenging to define, due to difficulties in following-up those professionals, who actually leave the country to deliver care in another country. It is important to understand the potential volume and reasons for outflow to secure a sustainable health workforce and develop responsive policies at national level.

In the second step, we identified the **five most mobile specialty groups** among medical doctors. In the case of cumulative specialty certificates, the certificate was considered to be that which medical doctors have in the operational registry, the field indicated for license. Selection was carried out based on the total numbers of certificate requests between 2010-2016. The aggregated numbers were checked in relation to the total number of active practicing medical doctors, more precisely the specialty groups. This exercise resulted in identifying the top five specialty groups of mobile medical doctors. In Hungary the five most affected professions by HWF mobility are the following: anaesthesiology and intensive therapy, internal medicine, paediatrics, general practice and surgery. Age distribution of these specialty groups were investigated.

In the third step, national data on wage increasement and numbers of scholarships were analysed. We aimed to present the **policy measures** that refer to the medical workforce and particularly affect the selected five most mobile specialty groups.

Results

1) National data on in- and outflow between 2010 and 2018

The national data on in- and outflow (new Hungarian graduates, recognized foreign qualifications, migration and retirement potential) are presented in Table 1-2. Regarding migration potential, the proxy indicator shows the number of doctors applying for verification certificates with the intention to work abroad between 2010 and 2018, divided by all applications including foreign MDs and Hungarian nationality MDs. In the years 2010-2012 there were around 1000-1100 medical doctors of which 840-940 were Hungarians. In the following years migration potential slightly decreased, and from the year 2016, a more significant decrease could be detected. The target countries for applicants are Germany, UK, Austria, Switzerland and Sweden.

To understand the risk of shortage in Hungary, the inflow data should also be considered, that is the number of new Hungarian graduates and the number of recognized foreign medical

diplomas. If considering the new graduates between 2010-2015, the number of new potential entries to the labour market is ranging from 705 to 905 medical doctors; however this number remains below the indicated outflow potential of all applications (940-1110 MDs). Even if we add the foreign health professionals who requested their diploma recognition in Hungary (less than 100 MDs annually before 2015), the number still does not reach the total numbers of the outflow potential. The table also shows that Hungary is not a crucial target country for foreign health professionals, as the number of recognition stays significantly low during the selected period of 2010-2018, with the highest inflow number of 137 MDs in 2018.

Table 1 - National data on in- and outflow between 2010 and 2018

Year	All applicants (including doctors with foreign nationality)	Hungarian applicants	Graduated doctors with Hungarian nationality	Number of recognized foreign medical diplomas
2010	986	845	705	49
2011	1090	930	750	53
2012	1106	940	905	75
2013	951	705	876	71
2014	954	701	864	82
2015	941	717	860	133
2016	823	615	866	108
2017	795	521	806	111
2018	743	452	900	137

Note: All applicants for good standing certificate - number of all doctors who applied for a verification certificate with the intention to work abroad

Source: HMR

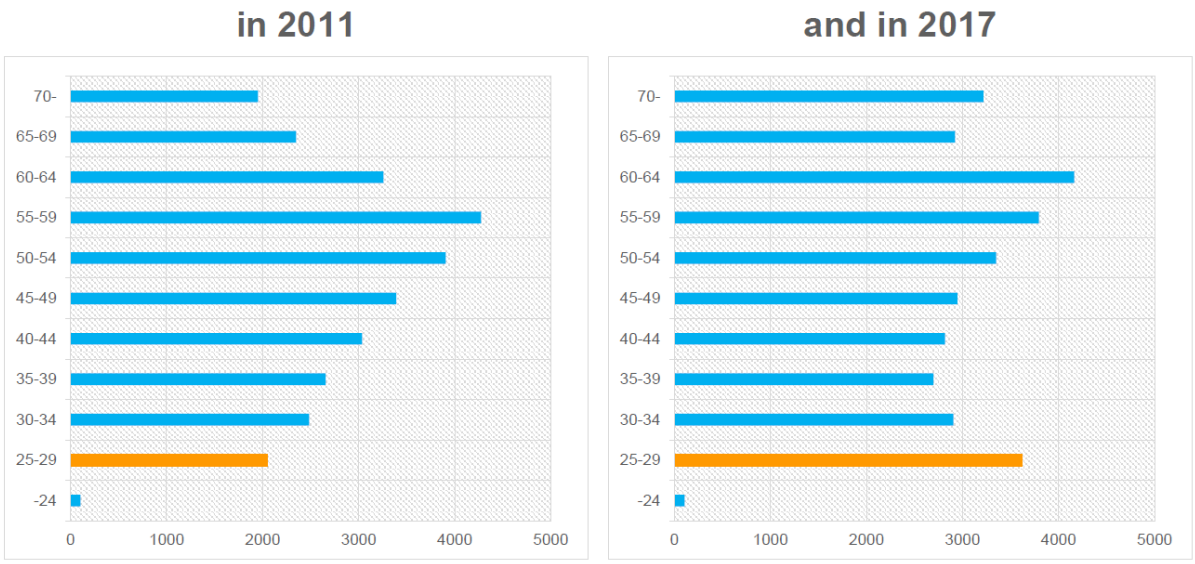
In addition, Table 2 and Graph 1 present the age groups of total of practicing medical doctors. The numbers show that the Hungarian practicing medical workforce is ageing. The age group 55-59 is overrepresented. Therefore, the retirement potential is quite high and young medical doctors can hardly fill in the loss of retired professionals until 2017.

Table 2 - Age distribution and total number of active doctors

Age group	2011	2012	2013	2014	2015	2016	2017	2018
25-29	2 050	2 380	2 736	3 096	3 462	3 605	3 617	3 686
30-34	2 483	2 460	2 455	2 468	2 594	2 663	2 904	3 178
35-39	2 656	2 762	2 742	2 881	2 900	2 807	2 699	2 604
40-44	3 036	2 968	2 792	2 820	2 604	2 700	2 819	2 863
45-49	3 391	3 385	3 353	3 378	2 955	3 012	2 946	2 763
50-54	3 908	3 872	3 757	3 725	3 281	3 303	3 350	3 288
55-59	4 276	4 371	4 426	4 318	3 786	3 837	3 796	3 636
60-64	3 258	3 452	3 603	3 913	3 632	3 984	4 165	4 209
65-69	2 349	2 535	2 747	2 855	2 416	2 717	2 923	3 128
70-	1 951	2 236	2 749	3 234	2 343	2 774	3 217	3 611
Total	29 462	30 529	31 454	32 801	30 085	31 515	32 543	33 078

Source: HMR

Graph 1 - Age distribution and total number of active doctors



Source: Páva-Bélteki, 2018

2) Detecting the five most mobile specialty groups of MDs

The top five most mobile medical specialty groups are anaesthesiology and intensive therapy, internal medicine, paediatrics, general practice and surgery in Hungary. Table 3 shows the volume of migration potential based on the number of doctors in the five specialty groups applying for verification certificates with the intention to work abroad between 2010-2017. Beside the sum of the mobile specialist MDs between 2010-2016 is the total number of practicing MDs in 2016, the number of prescribing MDs in 2017, and further rates of mobile MDs with and without prescribing activity were calculated. Prescribing is considered to be an appropriate proxy indicator for practicing activity, because those MDs prescribing in Hungary are actively practicing in Hungary.

Table 3 clearly shows that anaesthesiology and intensive therapy, and surgery are the most involved professions in mobility. 23.5% of MDs having qualification in anaesthesiology and intensive therapy applied for verification certificates in the reference period and the rate for surgeons was 17.9%. Analysing the prescribing activities, that is, a more precise estimate for realised mobility: 17.8% of anaesthesiology and intensive therapy professionals and 8% of surgeons might be affected by mobility. These data do not show a mass migration of MDs; however, paying attention to these specialty groups is an important task for policy making, particularly for retaining the most mobile MDs.

Table 3 - Migration potential of the five specialty groups

	2010	2011	2012	2013	2014	2015	2016	2017	Sum of mobile MDs 2010-2016	Prescribing	Mobile MDs without prescribing	Total number	Mobile/ Total	Mobile/ Total
Internal medicine	66	80	92	61	51	64	60	44	386	187	199	4862	7.94%	4.09%
General practice	60	70	87	72	29	40	42	20	331	180	151	5148	6.43%	2.93%
Anaesthesiology and intensive therapy	68	59	79	58	53	55	38	24	363	88	275	1542	23.54%	17.83%
Surgery	51	56	51	52	35	42	36	19	254	140	114	1419	17.90%	8.03%
Paediatrics	50	36	38	35	32	38	24	24	215	98	117	2902	7.41%	4.03%
Number of MDs without duplication	266	277	307	241	216	223	184	125	1423	614	809	14345	9.92%	5.64%

Notes: Sum of mobile MDs in 2010-2016 – sum of each specialty group

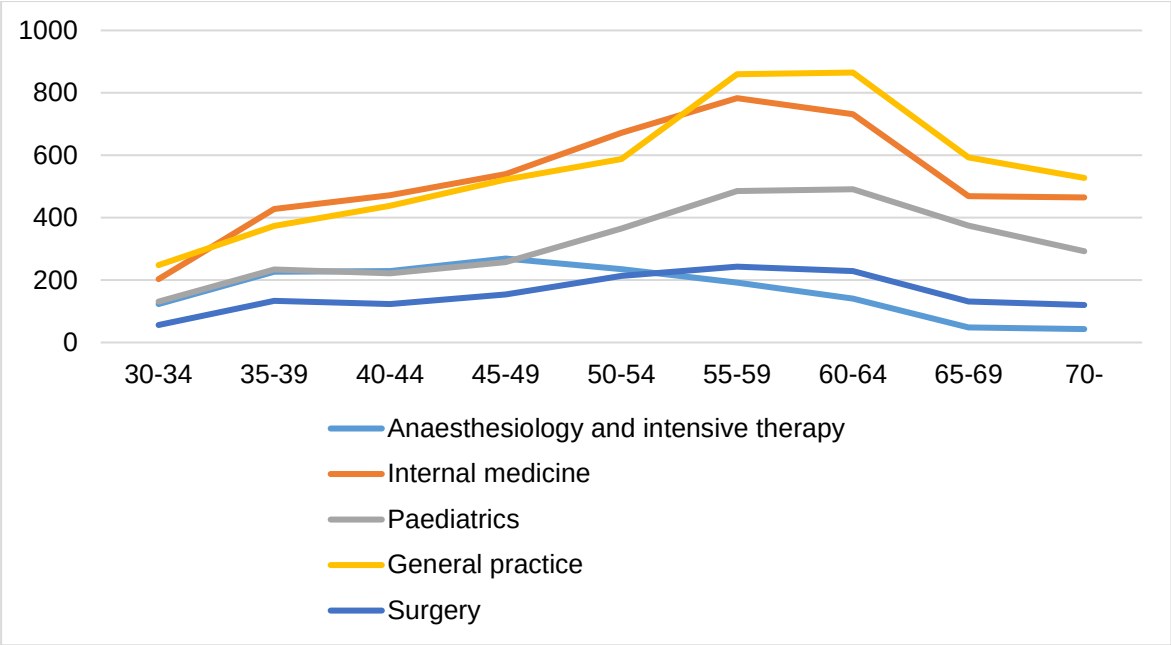
Prescribing – prescribing activity in the year 2017

Total number – total number of actively practicing MDs in specialty groups

Mobile/Total – rates of mobile MDs with and without prescribing activity

Source: Kovacs et al., 2019.

Graph 2 - Age distribution of the five mobile specialty groups



Source: Kovacs et al., 2019

In the next step of the study, we analysed aggregated numbers of specialists having a license to practice in Hungary. Graph 1 presents the age structure of the selected five professions practicing in Hungary. It can be observed that the largest groups of actively practicing MDs in Hungary are ages 55-59 years and 60-64 years. Significantly lower numbers can be found in the younger age groups, towards the starting point, namely, to the age group of 30-34 years. This trend calls attention to focusing on the retention strategies for the active workforce, particularly in the five selected and most mobile professions, and also to ensuring education for labour supply.

3) National data on policy measures to retain health professionals

In the last part of the study, we present some national data on policy measures introduced to retain Hungarian medical doctors in the system. The first policy measure aiming to retain HWF in the Hungarian national health system was the wage increasement. As high salaries are significant push factors for MDs when considering to work abroad, higher salaries provided in the home country can also function as a pull factor, resulting in higher motivation to stay in the home healthcare system (Buchan et al. 2014). Wage increasement measures were implemented in 2012-2013 and 2016-2019, resulting in doubled salaries of MDs in Hungary in 2017.

Table 4 - Net wage increasement measures for MDs in Hungary in 2010-2018

	Change in net wage based on 2010 2010=100%								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Doctors	100.0%	110.9%	136.1%	154.7%	157.5%	162.9%	184.7%	208.0%	238.7%

Source: HMR

The second most important policy measure is the Scholarship Programme that provides monthly net income for health professionals. In 2010, health policy recognised that less than 50% of the graduated doctors started their specialist trainings in Hungary (Páva-Bélteki, 2018). This urged policy makers to intervene. The financial incentive, a scholarship programme was introduced in 2011 with a scholarship for resident doctors. In 2012 and 2013, two additional scholarships were introduced, and then even more scholarships were implemented in the following years in more fields of the sector.

1. Markusovszky Lajos Scholarship Program was introduced in 2011. This scholarship is available to all resident doctors who are enrolled in their first specialization training, regardless of speciality. The scholarship stipulates that graduates must work in the public healthcare system upon completion of the specialty training. The monthly net sum of this scholarship is 100.000 HUF (approx. €310).
2. The second, Méhes Károly Scholarship Program was introduced in 2012. This scholarship is available to paediatric resident doctors. Upon completion of the specialization training, graduates are appointed to a service post in underserved areas in primary care practices that have been left vacant for a prolonged period. The monthly net sum of this scholarship is 200.000 HUF (approx. €610).
3. The third, Gábor Aurél Scholarship Program was introduced in 2013. This scholarship responds to acute shortages in emergency medicine. The Gábor Aurél Scholarship is available to emergency medicine resident doctors. Recipients must work at a Hungarian Ambulance Service assigned post upon completion of the specialization. The monthly net sum of it is 200.000 HUF (approx. €610).
4. The fourth, Scholarship for shortage professions, was introduced in 2015 for those resident doctors who are enrolled in their first specialization training in 2015 in the fields described as “shortage professions”. The list of “shortage professions” is published annually by the Ministry of Health. The monthly net sum of this scholarship is net: 150.000 HUF (approx. €460).

Besides these, further programmes are available in other professional groups. The Flór Ferenc Scholarship for national defence-catastrophe- and law enforcement medicine was introduced in 2016. The monthly net sum of this scholarship is net: 150.000 HUF (approx. €460). Than Károly Scholarship was introduced for clinical specialist pharmacists. The monthly net sum of the scholarship is: 100.000 HUF (approx. €310). Additionally, Michalicza Scholarship brought nurses into focus the scholarship was introduced for nursing MSc students. The sum of the scholarship in the first semester is 640.000 HUF (approx. €1940), and later on the sum is depending of the scholastic records of the beneficiary.).

Table 5 aims to summarise essential data for resident doctors and to present the evolution of the different scholarship programmes in Hungary. In Table 5, numbers of MDs entering the specialist training is summarised. From 2011 to 2015 a significant increase was experienced (705 to 1075 respectively). Similar trends were seen regarding the applications for resident training in shortage professions (318 to 517 respectively) and doctors joining the scholarship programme (610 to 902 respectively). In terms of the graduates entering the specialty training, the rate stagnated around 50% before 2015, and from 2015 a significant increase could be detected. The latest numbers show that approximately 70% of the graduated Hungarians enter the residency training in Hungary, which means that they are practicing in the public healthcare provision of Hungary.

Table 5 - Data for resident doctors in 2010-2018

Year	Application for subsidized resident doctor positions – MDs entering the specialist training	Applicants for resident training in shortage professions	Rate of graduated Hungarians entering to residency training	Doctors who joined the Scholarship Programme
2010	420	195	46.95%	-
2011	705	318	50.27%	610
2012	710	349	48.95%	509
2013	794	403	48.97%	580
2014	884	448	51.12%	827
2015	1075	517	69.53%	902
2016	917	210	70.67%	867
2017	824	233	68.11%	746
2018	923	422	69.89%	832

Note: Doctors who joined: Markusovszky, Gábor, Méhes, or the shortage professions scholarship

Source: HMR

Conclusions

As health policy in Hungary recognised the need for HWF planning around 2010, several important actions have been carried out since then. A central data warehouse provides up-to-date data for decision makers to implement policy actions and to monitor their influence. The so called Human Resource Monitoring System in the Health Sector (HRM) is the most reliable and valid data source, which enables HWF monitoring and some forecasting for the near future (AEEK 2010-2018, Kovacs et al., 2019).

Precise data is necessary to monitor the trends affecting the HWF (Kovacs et al., 2016). The composition of the HWF, gender, age and geographical distribution can support a balanced HWF at the national level. Not only static, but flow data is crucial to estimate the future in- and outflows of health professionals and to anticipate the current and future vacancies to be filled in.

The selected data from HRM showed that Hungary suffered from a high outflow of health professionals and could hardly fill in the loss of retired and potentially mobile professionals until 2017. The number of applications for certificates due to work abroad is continuously decreasing from 2012, possibly as a consequence of newly introduced policy interventions. The graduates in general medicine commit themselves to the Hungarian healthcare system after the completion of their specialist training. The Scholarship programme introduced for doctors pays a basic monthly benefit about the same as their net salary in 2011 – and manages to retain MDs. Medical doctors participating in the program should work in the Hungarian public healthcare sector after the successful completion of the specialist training as long as the benefit in the form of different scholarships was granted. Since 2011 only 1% of doctors receiving scholarships withdrew from the programme. In 2017, the number of graduates was about the same as those who entered into specialist training, as was the number of doctors who applied for the scholarship programme (Páva-Bélteki, 2018).

From the scholarship data, we can state that Hungarian policy makers carried out an evidence-based health policy in order to retain MDs in the public healthcare provision in Hungary, and in particular to fill shortage professions, where remarkable vacancy was experienced. Hungarian health policy intervened and managed to tackle the issue of HWF outflows and shortages, as well as to increase the number of MDs entering the specialty training and thus staying and practicing in the Hungarian public care provision (Eke et al., 2016, Kovacs et al., 2019).

For the future, we can identify some important actions to provide a sustainable HWF in Hungary, sustaining or even improving the current mobility trends, such as maintaining and increasing the positive effects of financial incentives.

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