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Policy responses to doctor and nurse migration in the European Region: insights from nine country case-studies

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Abstract
The WHO Regional Office for Europe conducted 9 country studies of migration of doctors and nurses. This paper identifies similarities and variations in migratory flows, factors that influence them, and related policy responses. The 9 countries include 4 that integrate the European Economic Area (EEA), Ireland, Malta, Norway, and Romania, and 5 non-EEA, Albania, Armenia, Georgia, Moldova, Tajikistan. Case writers used a common study template that covered international outflows and inflows, mobility push, and pull factors, and related policy interventions. Data sources include the WHO/Europe-OECD-Eurostat joint questionnaire and country databases. Emigration is motivated by low wages, dissatisfaction with working conditions, inadequate practice environment, excessive workloads and lack of opportunities for professional development. Flows for doctors and nurses vary in volume over time, and in countries of origin and destination. Pull factors include the free circulation of persons within the EEA for citizens of member states, easy access to work permits, common or easily learned language, and the presence of a diaspora in a destination country. Policies to improve retention include increasing the number of training places, making remuneration and working conditions more attractive and compulsory service. All countries have some health workforce development plan, but implementation is a challenge everywhere. Policies should be tailored to country labour market conditions, migration trends, and institutional capacity. Better understanding of migration flows will improve the effectiveness of policy responses.

Introduction

In the WHO European Region, doctors and nurses move between countries at an increasing rate [1]. In order to advise its members states on effective health workforce policy, the WHO Regional Office for Europe (WHO/Euro) aims to gather the best data and information available on the dynamics of the health labour market [2]. In 2023, member states adopted a Health and Care Workforce Framework for Action 2023–30, whose central pillar is to improve retention of health workers [3, 4]. The Region includes 53 countries, 30 of which are part of the European Economic Area (EEA); a free-trade zone comprising the 27 European Union member states, plus Iceland, Liechtenstein, and Norway. The EEA allows for the free movement of people and the mutual recognition of health professionals' qualifications within the area. The countries of the Region vary widely in terms of income level, population size, historic and cultural background, health profile, healthcare system and migration pattern. Some are primarily countries of emigration ('source'), others of immigration ('destination'). Some countries are to some extent a source of health professionals for other countries and a destination.

This paper summarizes the findings of 9 country case studies conducted by WHO/Euro [5]. High-income countries typically receive more immigrants, and lower income typically experience the opposite [6]. It is, therefore, important to document various country situations to get a more precise understanding of mobility of health

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workers. There are other forms of international mobility, such as for education purposes or cross-border practice that will not be discussed here [7].

This paper aims to identify similarities and variations in in- and out-migratory flows of doctors and nurses in a selection of countries of the WHO European Region, factors that influence these flows, and policy responses that countries to manage them and their impact. There is general knowledge on what brings a doctor or a nurse to pursue their career in a different country [8]. However, few countries document precisely how many make that choice, for what reasons, and where they choose to practice. Thanks to immigration and professional registration requirements, it is easier for destination countries to identify health workers entering the country and their profile, than for countries of origin to keep track of those who leave. As policy responses vary, it is important to identify and analyse them in order for WHO/Euro to advise its members states in an effective manner in matters of health workforce policy.

Methods

This article synthesizes the findings from a 9 country case studies. The selection of cases aimed to include migration experiences from countries of varying level of economic development of different parts of the Region. Four are EEA countries, Ireland, Malta, Norway, and Romania, and 5 are non-EEA, Albania, Armenia, Georgia, Moldova, Tajikistan. Norway, with the highest Gross National Income (GNI) per capita in Europe is mainly a destination country. Ireland which is the second richest, is primarily a destination country, but it also reports exits. Romania is mainly a source and, to a lesser extent a destination country. The 5 non-EEA countries include 4 middle-income ones and one low-income [9]. Albania, a source country, was included to ensure representation from the Western Balkans, and Malta to represent countries with a small population. The others are ex-Soviet Union countries; they are source countries at varying degrees. Three, Armenia, Georgia, Moldova, were chosen for being part of the Eastern Partnership countries [10], with, Belarus and Ukraine, that WHO/Euro and the European Union support to strengthen their health systems.

A template for the studies covered basic country and health system data, health workforce profile, outflows (volume, destination) and inflows (volume, source) of doctors and nurses, mobility push and pull factors, impact of migratory flows on the domestic health care system, policy interventions in relation to these flows, including the implementation of the WHO Global Code of Practice on the International Recruitment of Health Personnel [11], and lessons learned. Authors were researchers from the country to ensure familiarity with the policy context and access to material in the national language.

Statistical data sources were the *WHO/Euro, Organization for Economic Co-Operation and Development (OECD), and Eurostat Joint Data Collection Questionnaire on non-monetary health care statistics*, databases of government ministries and agencies with health workforce responsibilities, and professional councils. The review of published and grey literature provided additional information. Two staff of the Health Workforce and Service Delivery Unit at WHO/Euro and WHO Country Officers reviewed drafts of case studies, followed by validation by the respective ministries of health.

Results

Table 1 presents country and health workforce data. The 4 EEA countries are 'high-income' (as measured in current USD), though with major differences between them: Romania (46 420), Malta (57 860), Ireland (99 470) and Norway (105 770). The non-EEA countries include 4 middle-income countries, Albania (23 310), Armenia (21 990), Georgia (26 570); and Moldova (18 880), and a low-income outlier, Tajikistan (71 000) [12].

Medical density in Albania and Tajikistan is 18.8 and 17.3 physicians per 10 000 population, respectively, while the other seven countries report at least double that proportion. The variation in nursing density is even more pronounced: Norway has a density of 154.8 per 10 000, nearly three times that of Tajikistan, which has 47.5 [13].

The number of doctors and nurses with one exception; in Armenia, the number of nurses declined by 1120 in the period 2013–22 [3]. Densities and absolute figures are given in headcounts, not in full-time-equivalent, and do not reflect the real availability of doctors and nurses, hence the need to interpret them with caution.

Outflows

Two indicators estimate the volume of outflows of health professionals: the number of Certificates of good standing (CoGS) issued by professional councils or ministries of health, a document required by destination countries, and the number of nationals registered in a different country. CoGS indicate an intention to migrate, that may not be concretized. Some individuals make multiple CoGS requests to augment their options of destination. Some use their certificate to facilitate cross-border practice, as takes place between Northern Ireland (UK) and the Republic of Ireland or between Sweden and Norway for example. Not all countries systematically track or report on CoGS numbers nor follow-up on applicants' decision to emigrate or not. Data on CoGS can give information that should be a major concern for policy-makers: e.g. in Moldova, 1967 doctors requested CoGSs between 2018 and 2024, which corresponds to 81% of medical graduates during the same period (2400). In Albania, the figure was 61% between 2018 and 2022. In Tajikistan, there were only 170 requests between 2020 and 2024, but the total of doctors who left the country is 10 times higher (1754); this is because most went to countries, mainly Russia, that do not request a CoGS. There were only 2 requests by nurses, but 4724 left during that period.

The other indicator is available from the WHO/Euro/OECD/Eurostat figures of foreign-trained doctors and nurses registered in ORCD member states [13]. These figures include nationals who trained abroad, like French or Portuguese who study in Romania, Hungary or Slovakia, and return to their country of origin after graduation to practice. This indicator does not cover non-OECD countries.

The volume of emigration of doctors varies; among EEA countries, the stock of doctors trained in Norway and in Malta and registered in another OECD country is negligible. It is the same for non-EEA countries, except for Albania and Moldova, with the number of nationally trained doctors registered in a OCDE country is equivalent to about one-fifth of the domestic medical workforce.

The stock of nurses trained in the 5 non-EEA countries registered in OECD countries is small; 1317 from Albania and 346 from Moldova in 2023, representing 10.6% and 1.8% of total number of nurses, respectively, in these countries. There were less than 30 from the other 3 countries.

Outflows vary over time. For instance, in Romania, the number of doctors emigrating between 2012 and 2021 dropped by two-thirds, from 1532 to 461; nursing emigration remained stable [14] The outflow of Albanian doctors to Germany grew year after year between 2015 and 2021, whereas that of nurses started increasing after 2017. In Moldova the number of CoGS requests from doctors and nurses decreased from 685 in 2018–297 in 2024; since 2020, there have been fewer indications of Romania and Germany as a potential destination country for doctors, and an increase for nurses applying to Italy since 2021.

Destinations of emigrant doctors and nurses differ. For example, for Romanian doctors the top 3 destinations in 2021 were France, Germany, the USA in that order. For nurses, destinations were Italy, the UK, and Belgium. For Irish doctors, the top destinations were Canada, the UK and Australia in 2021; for nurses, they were Australia and the UK. The majority of emigrant doctors from Albania are in Germany, and that of nurses, in Italy. Destinations change over the years: historically, Armenian and Georgian doctors moved to Russia, where the recognition of their diploma and their

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Table 1. Medical and nursing workforce in 9 countries of the WHO European Region

	EEA				Non-EEA				
	Ireland	**Malta**	**Norway**	**Romania**	**Albania**	**Armenia**	**Georgia**	**Moldova**	**Tajikistan**
Population (000 000)	5.30	0.545	5.62	18.9	2.77	2.95	3.80	2.94	9.89 (2021) 10.2 (2024)
Income level[a]	High-income	High-income	High-income	High-income	Upper-middle	Upper-middle	Upper-middle	Upper-middle	Lower-middle
Doctor density per 10 000	40 (2023)	43.4 (2021)	51.6 (2021)	37.4 (2021)	22 (2023)	46.61 (2023)	59 (2023)	50.8 (2023)	21.0 (2021) 21.1 (2024)
N. doctors	22 317 (2023)	2568 (2024)	33 968 [b](2023) –	71 293 [c](2022)	5397 (2020)	11 185 (2023)	22 000 (2022), Estimated	12 316 (2023)	17 352 (2014) 20 797 (2021)
N. medical graduates last 5 years[d]	6620 (2018–22)	650 (2019–23)	2842 (2019–23)	24 700 (2018–22)	1322	7136 (2019–23)	6923 (2018–22),	∼2400 (2018–24)	8817 (2021–25)
N. CoGS[e] last 5 years	N.A.	N.A.	N.A.	N.A.	809 (2018–20)	N.A.	N.A.	1967 (2018–24)	170 (2020–24)
N. national doctors in OECD countries (2021)[f]	5859 Canada 2045, UK 1847, Australia 1265	420 369 in UK	131	21 802	1161 Germany 897	452 Germany 257	631 Germany 491	1222 Israel 913 +Romania 1939	170
% foreign-trained doctors[g]	44% (2022)		44.0% (5131 in 2023)	N.A.	100	N.A.	N.A.	0.45% (52 in 2024)	1.2% (255s)
Nurse density, per 10 000	127 (2023)	79.5 (2021)	154.8 (2023)	84.3 (2022)	54.5 (2023)	52.11 (202)	59.5 (2023)	78 (2022)	48.7 (2021) 48.9 (2024)
N. nurses	79 489 (2023)	4136 (2022)	120 204 [h](2023)	160 596 (2022)	15 692 (2023)	15 588 (2023)	22 000 (2023)	18 902 (2022)	44 118 (2021)
N. nursing graduates last 5 years	8320 (2018–22)	26 (2018–23)	21 436 (2019–23)			8530 (2019–23)		869 (2024)	44 629 (2020–24)
N. CoGS last 5 years (nurses)	N.A.	N.A.	N.A.	N.A.	∼600 (2019–23)	N.A.	N.A.	830 (2019–23)	2 CoGS Between 2021 and 2024 4724 left the country (no requirement of CoGs)
N. national nurses in OECD Countries (2021)	3780 Australia 1822, UK 1614	105 UK 87	8	23 109 Italy 11 861 UK 7369	1227 Italy 1180	5	11	770 Germany 537	2
% foreign-trained nurses	49.06% (2022) 33 270 0f 67 808	N.A.	13% (2024)	N.A.	N.A.	N.A.	N.A.	N.A.	4%
International students	Medical 645 (2022) Nursing, N.A.	Medical 466 (2018–23) Nursing 195 (2018–23)	Few because training is in Norwegian.	10 502 (2019) Nursing, N.A.	N.A.	Medical 234 between 2018 and 2024 Nursing, N.A.	Medical 33 015 (2018–23), 60% from India Nursing, N.A.	Medical 1758 (2025) Nursing, N.A.	Medical 1918 Undergraduate 18 postgraduates from 23 countries Nursing, N.A.

a: World Bank country classification by income group.
b: Professionally active.
c: Including residents.
d: Includes international students.
e: Certificate of Good Standing.
f: *Source*: OECD Data Explorer.
g: Includes nationals who trained abroad and returned.
h: Professionally active.

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Table 2. Policy responses to migration flows of doctors and nurses in 9 countries of the WHO European Region

	EEA				Non-EEA				
	Ireland	**Malta**	**Norway**	**Romania**	**Albania**	**Armenia**	**Georgia**	**Moldova**	**Tajikistan**
Education reforms	Increase of medical and nursing training places	Increase of investment in medical and nursing education	Increase of training places in medicine	Improved medical education and research conditions	Increase of medical training places	Nursing education reforms to strengthen practical skills and expand professional competencies.	New training centres and courses for nurses	Increase of medical training places	New continuing education possibilities for doctors
Community Service for doctors	No	No	No	No	5 years after graduation proposed in 2023, reduced to 3 years for 1st-year students; 2 years for 2nd–4th-year students; 1 year for 5th–6th-year students	No	No	3 years introduced in 2018, increasing to 5 years in 2026	3-year service obligation after graduating from public medical colleges Provision of quotas for the education of students coming from rural areas
Financial incentives	New consultant contracts in 2022 (to encourage Ireland-trained doctors in Australia and the UK to return)	No	No	Salary increases 2016–22 (family doctors, 200%, specialists, 250%, nurses 70%–100%)	Salary increases (40% in 2021, objective 900€ in 2025). Bonus for specialists in 2023	No specific incentives to address migration. Modest increases of health workers' salaries; impact considered low.	Proposed minimum salary for health workers, but impact expected to be minimal. Some employers offer incentives	Since 2015, healthcare workers' salaries have tripled, reducing the wage gap between the public and private sectors, and between Moldova and Romania.	Provision of housing, land parcels and utility allowances
Working Conditions	No specific intervention reported	Maltese language training, family-friendly measures, and the '*Embracing Diversity*' Adaptation Programme to support the integration of foreign healthcare professionals.	Generic interventions to improve working conditions of health personnel. (flexible working hours and better work-life balance)	The National programme for resilience includes plans to upgrade medical facilities and improve working conditions.	The need to improve working conditions is recognized, but main initiatives have focused on remuneration.	Some unspecified planned efforts to improve working conditions.	Improving working conditions, in particular of nurses, is a priority, but 'still needs to be addressed in an efficient way »	Ministry of Health initiatives to provide 'decent and safe working conditions, a zero-tolerance policy toward violence against healthcare workers, improved occupational health and safety standards, and attention to gender- and age-specific needs, with specific focus on mental health and overall well- being'	Construction, refurbishment and equipment of health facilities.
Bilateral agreements	With Pakistan, Sudan *Work-learn-return migration scheme for foreign-trained doctors (251 participants in 2023)*	With Spain to facilitate the employment of Spanish nurses in Malta. No info on numbers	None	Yes, but not functional	Agreements in relation to training and transfer of knowledge or experience with Israel, Italy, Montenegro, North Macedonia, Türkiye, and Kosovo	Mutual recognition of diploma within the Eurasian Economic Union	General (not health-specific) agreements on temporary employment with Germany, Israel, France, and Bulgaria. Only two implemented (Germany and Israel).	With Israel, Azerbaijan, Russia, Bulgaria, Belarus, Ukraine, France, Greece, Cyprus, Italy, Spain, focusing on cooperation in the healthcare field, but not specifically addressing migration	Agreements with the Russian Federation emphasize cooperation in strengthening the capacity of Tajik health professionals; migration not covered
Tracking Migration flows Planning	The Ministry of Health *Doctors Training and Planning* published its first *Annual Medical Retention Report in 2023* The CSO has started to track emigration and return of newly graduated doctors, nurses and midwives. No publication yet.	Data collection on migration and on the impact of policy interventions by the People Management Division of the Ministry for Health and Active Ageing.	Statistics Norway and the Directorate of Health monitor the international inflow and outflow of healthcare workers but there is no reporting available	Creation of a National Registry of Healthcare Professionals for improved data gathering and analysis, by the Ministry of Health	No	Launch of a national workforce registry in 2025. Does not include migration data	Process of improving healthcare workforce information systems, for periodical assessment of retention and migration, and identification of migration trends	Re-launch of the health workforce information system is a priority for the Ministry of Health after a gap of 3 years off-line. There is a database on the number of requests of CoGS.	The Ministry of Health and Social Protection keeps records of personnel migration, including of returner, though. the official medical statistical compendia do not publish information on migration

(continued)

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Table 2. Continued

	EEA				Non-EEA				
	Ireland	**Malta**	**Norway**	**Romania**	**Albania**	**Armenia**	**Georgia**	**Moldova**	**Tajikistan**
	The Department of Health collaborates with the European Commission Directorate-General for Structural Reform Support to strengthen workforce planning capacity	The *Health work force strategy 2022–2030 (3)* addresses migration. Participation in the European project, HEROES, to develop health workforce planning tools	The *National Health and Coordination Plan 2024–2027* includes measures to retain and recruit healthcare personnel. Specific initiatives include targeted recruitment campaigns and more professional development opportunities.	The Ministry of Health, *Sectoral Action Plans for the Development of Human Resources in Health 2023-2030* defines objectives to improve retention by making working conditions more attractive and offering more professional development opportunities	*Action Plan for Health Staff Development in Albania 2023–2030*	*Health Sector Part of the Strategy and Action Plan (2023–2026).* No specific measures targeting migration of health personnel.	The *National Health Strategy of Georgia 2022-2030* aims to introduce needs-based health workforce planning (mainly doctors and nurses).	The establishment of the Department for Policies in Healthcare Personnel Management (Ministry of Health) and of the Department for Analysis and Planning of Human Resources in Health (National Agency for Public Health) helps in collecting and analysing data on HWF, although limited planning tools are available and used for long-term HWF planning and forecasting.	There is a generic 'migration management strategy for the period up to 2040' launched in 2023 covering education reforms and retention strategies for health workforce.
Mobilization of the Diaspora	No intervention reported	No intervention reported	No intervention reported	No intervention reported	The *National Strategy on Albanian Diaspora 2021–25* includes a fellowship mechanism to promote the transfer of knowledge and skills of the diaspora.	Active, but ad-hoc; Organizations such as the Armenian Medical International Committee (AMIC) and the Armenian American Medical Society (AAMS) coordinate efforts in clinical training, high-complexity care, and medical research.	The Georgian International Medical and Public Health Association, provides care, second opinion and telemedicine services. Was particularly active during the COVID-19 pandemic	The Boards of Directors of healthcare institutions must include one member from the diaspora as part of an effort to mobilize it.	Private health facilities outsource Tajik doctors who have emigrated to the Russian Federation for short-term visits to provide services and to offer master classes. No specific government policy
WHO Global Code	No publicly available assessment of the application of the Code. However, it is a policy to improve self-sufficiency in accordance with the Code	The Ministry for Health and Active Ageing is committed to establish a sustainable health workforce and effective planning, And to ethical international recruitment practices.	Norway has reported in all reporting rounds. The Codeis considered as the basis of policy in the National Health and Coordination Plan	Principles accepted, but no actions reported	Principles accepted, but no actions reported	Principles accepted, but no actions reported	Georgia did not report in 2021 and 2024, however, the Ministry of Health committed to take actions and to report in the next cycle (2027).	Principles accepted, but no actions reported	No action reported No mention in the Strategy of Public Health for the period to 2030

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integration was easy; they now show a preference for EAA countries, notably for Germany, and the USA.

Inflows

Ireland and Norway have the highest proportion of stock of foreign trained health professionals. In Norway and Ireland, they represented 44% of the medical profession. For nurses, the figures were, respectively, 52% and 6% in 2023 [15]. The patterns of inflows of doctors and nurses in destination countries vary. In Norway; immigrating doctors come from Poland, Hungary, Germany, Denmark, and Slovakia in that order. Those trained in Hungary and Slovakia may include Norwegians who qualified there and returned home to practice. Foreign-trained nurses come from the Philippines, Sweden, Denmark, Poland, and Lithuania, in that order. In Ireland, countries of origin of doctors were, in Pakistan, Sudan, UK, South Africa and Romania, and for nurses, India, the Philippines and the UK. Inflows are small in the other 7 countries, though they receive important numbers of international medical students, like in Romania, where 10 of 13 medical schools offer training in French or English.

Factors that influence mobility

Reasons for emigrating include low remuneration, lack of opportunities for professional development and limited possibility to apply new knowledge and skills, inadequate practice environment (infrastructures, equipment) and excessive workloads. In Tajikistan, emigrants also mention bureaucratic burden, safety at work and the risks of contracting communicable diseases.

Within the EAA, the free circulation of citizens of member states and the process of recognition of qualifications make emigration easier. Romanian health professionals benefited from these advantages after their country joined the European Union in 2007. Romania became attractive to Moldovan doctors; it also triggered the development of medical programs targeting students from other EU countries who could acquire qualifications recognized in their country of origin. Ability to speak or to quickly learn a foreign language facilitates emigration. Armenian, and Tajik professionals speak Russian; Romanian is a Latin language and its speakers (Romanians and Moldovans) can be rapidly functional in France or Italy. As regards Albanians, a long tradition of access to Italian radio and television makes integration in Italy easy. Germany's policy adopted in 2015 to facilitate the recognition of diploma and access to work permits to professionals from the West Balkans attracted numerous Albanian doctors and nurses. The presence of a diaspora in a destination country is also a factor of attraction of potential emigrants and a facilitator of their integration.

Policy responses

The loss of health workers, and the related lack of return on the investment in their training as in non-EEA countries and Romania, or a high dependency on foreign-trained staff, as in Ireland, and to a lesser degree in Norway, represent difficult policy challenges. The 9 countries have some plan to improve recruitment and retention. Examples are the *Health workforce strategy 2022–2030* in Malta, Norway's *National Health and Coordination Plan 2024–2027*, Ireland's *Health Services People Strategy (2019-2024)*, and the *Action Plan for Health Staff Development in Albania 2023–2030*. These plans mention the importance of international flows, but none presents comprehensive policy responses targeting migration issues.

In some countries, the planning effort includes to improve data on migratory flows. For example, in 2023, Ireland's Central Statistics Office (CSO) and Department of Health published their first reports tracking emigration and return of newly graduated doctors, nurses and midwives. Statistics Norway and the Directorate of Health track international flows of healthcare workers, but there is no official reporting. The Romanian Ministry of Health created a National Registry. The non-EEA countries do not publish official data on migratory flows of health workers. For example, in Tajikistan, the Ministry of Health keeps migration records, but these are not part of official statistical compendia.

Policy interventions tend to be limited to education related strategies, like increasing the number of admissions to health professional studies (Ireland, Norway), investing in health education and research (Malta, Romania), reforms to modernize nursing education (Armenia and Georgia) and improve regulation (Georgia). These are potentially effective interventions, but they face obstacles like the lack of qualified educators, infrastructures and funds. In non-EAA countries, access to continuing professional development remains limited. In Georgia, where the private health services dominate, it is almost non-existent and depends on the initiative of some employers and professional associations. Reforms in postgraduate medical education are ongoing in Georgia; however, the extent of their implementation, their results and their impact are yet to be assessed.

Policies to improve remuneration and benefits are common. In Romania, in 2022, the average salary of doctors in the public sector was 200% of that of 2016 (in constant Lei), and for those at the highest grade, it was 250%. For nurses, the increases were 70% and 100%. There was a positive impact on the retention of health professionals, notably of nurses, though career development remains a problem that affects job satisfaction, bringing young professionals to continue to envisage emigration [10]. This increase in salaries also had the unintended effect of attracting doctors from Moldova; this was despite the country having increased salaries, though not sufficiently high to reduce the gap with Romania. In non-EEA countries, remuneration remains comparatively low: in Armenia, salaries of health workers have increased every year since 2013, but in 2023 they were still below the average monthly salary of all sectors (585 vs. 732 USD). Mean monthly salaries in Georgia were comparable to the national average at 550 USD for doctors in 2021 and 280 USD for nurses, while major income disparities existed within the professions. Georgia recently introduced a system of minimal wages for health workers; however, the hourly wage remains low (e.g. about 1.70 USD for nurses and 2.70 USD for physicians in 2022). In Albania, monthly salaries increased by 25%, to 1200 USD for family doctors, to 1600 USD for specialists and 800 USD for nurses. In Tajikistan, salaries of all health workers increased 40% in 2024; however, salary levels remain below the national and the regional averages.

Three countries reported having compulsory service rules for new graduates. Moldova introduced a 3 year- service in 2018, to be increased to 5 years in 2026. A 5-year period was also proposed in Albania in 2023, by withholding access to diplomas; strong opposition from students and the medical profession, and a Constitutional-Court ruling, reduced the proposal to 3 years for 1st-year students; 2 years for 2nd–4th-year students; and 1 year for 5th–6th-year students. There is a 3 year-service obligation in Tajikistan for students funded from the State.

Since 2013, Ireland, through its International Medical Graduate Training Initiative, has bilateral agreements with Pakistan and Sudan to recruit doctors from these countries on a temporary basis. Since 2014, Malta has an agreement with Spain to facilitate the recruitment of Spanish nurses. Georgia signed agreements on temporary employment (not exclusive for health workers or health related jobs) with Bulgaria, France, Germany, Israel, but only the latter two have been implemented; a small number of nurses have taken advantage of this opportunity. Armenia has agreements of mutual recognition of diploma with Iran and with countries of the Eurasian Economic Union (Belarus, Kazakhstan, Kyrgyzstan, and Russia). Their impact on migration of health professionals is not known.

Another strategy is the mobilization of diaspora health professionals. In non-EAA countries, there are government initiatives to harness the diaspora, such as a system of fellowships in Albania and various ad-hoc collaborations with diaspora organizations, like the Georgian International Medical and Public Health Association, the Armenian Medical International Committee and the Armenian

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American Medical Society. The Ministry of Health of Moldova has tried to reach agreements on circular migration with a number of destination countries, but no progress is reported.

The 2010 *WHO Global Code of Practice on the International Recruitment of Health Personnel* gives policy orientations and a framework to enable better management of migratory flows, to secure their advantages and to mitigate their negative effects. All countries express commitment to the principles of the *Code*, but report few actions to implement its recommendations.

Discussion

This review of 9 country cases shows commonalities and important differences in the migration of doctors and nurses. As expected, emigration is more prevalent in lower income countries, for motives related to low wages, dissatisfaction with working conditions and a desire for professional development. On the other hand, there are reasons or circumstances that trigger emigration that are specific to each country, like the entry of Romania in the European Union, or an international conflict in Armenia. This is consistent with the analysis of 17 European country cases (Romania is one of them) reported by Wismar *et al*. in 2011 [16].

Some policy responses are common to most, like increasing remunerations, but others are country-specific, like in education. EEA and non-EEA countries form distinct clusters, due to the free movement of persons in the EEA. Among the latter, 3 (Albania, Georgia, Moldova) are candidates to entry in the European Union, which is an additional attraction factor for potential emigrants. Historical ties and linguistic differences impact the direction of migratory flows. Ex-USSR countries and countries in the Eastern Block had a tradition of emigration to Russia, that changed in Georgia, Moldova, Romania when they became candidates to entry and member of the European Union. The negative impact of exits varies; it is greater in countries that lose more health workers, in small countries, and in those with low densities of health workers. Overall, this means that each country's experience should be regarded as unique and that policies should be adapted to each one's specificities.

The case studies also show a dearth of data and information, particularly on outflows. Only Ireland has started to track its medical and nursing graduates [17]. There is no tracking of national students who get a degree in another country and return to practice, a significant phenomenon in the EEA. Current available data does not capture migrants who do not get recognition of their qualifications; some work at a lower level, like Romanian, Albanian and Georgian nurses working as informal carers (badanti) in Italy where demand is high and job opportunities abundant and easily accessible. Other emigrants abandon the health sector altogether. While data on registered foreign-trained doctors and nurses is available for OECD countries, only to 2021, it is not available for other known destinations, like Russia or Gulf countries. Dual, even multi-country, registration is an unknown. The collection of this missing data is a major challenge, but efforts to bridge the gap are worth making. Policy development and implementation improve in function of the knowledge of the problem they aim to address. The strengthening of databases on the migration of health workers and health labour market analysis are strategies that the advice and support of WHO/Euro can prioritize, in collaboration with international partners like Eurostat, OECD, the European Commission and professional organizations. WHO/Euro can also support the design and implementation of legal/policy frameworks for ethical recruitment and bilateral coordination.

With more capacity to collect and analyse data, countries can be better equipped to plan and to act to ensure the availability and sustainability of a workforce that meets the needs of their population.

Conclusion

The 9 country cases bring useful information on migratory flows of doctors and nurses in the WHO European Region. This suggests that more countries should be studied; examples could be the more populous EEA ones, France, Germany, Italy, the UK, to understand the characteristics of their inflows or the Southeastern European countries other than Albania and Moldova to see if their migration experience differs, or countries, like France, Portugal, Spain, the UK, whose inflows originate in good part from former colonies. As knowledge increases on why doctors and nurses, and other health professionals, move from their country of origin to another one, policies to better manage migration flows and improve retention will be better evidence-informed and their potential effectiveness will improve. There is also a need for the countries that have accepted the principles of WHO Global Code but have reported no action, to start acting.

Author contributions

Tomas Zapata, Yanina Andersen, James Buchan, and Natasha Azzopardi-Muscat conceptualized the study and designed the template for country data collection. Veronica Montebello, Erlend Tuseth, Teodor Blidaru, Dragos Nicolae, Niamh Humphries, Jonila Gabrani, Ilia Nadaresihvili, Emma Ghazaryan, Radu Comsa, Rukhshona Qurbonova, and Sergiu Otgon collected country data and wrote the first draft of the country case studies. Yanina Andersen, James Buchan, and Tomas Zapata reviewed all the case studies. Gazmend Bejtja, Parvina Makhmudova, Ilker Dastan, Casimiro Dias, Tomas Roubal, and Sulakshana Nandi reviewed their country case studies. Alba Llop-Girones reviewed all the data of all country case studies. Gilles Dussault led the writing the manuscript with support of Tomas Zapata, James Buchan, and Yanina Andersen. All authors have reviewed the final draft.

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Key points

- In the WHO European Region, doctors and nurses move between countries at an increasing rate.
- The WHO Regional Office for Europe (WHO/Euro) conducted 9 country case studies in order to better advise its member states on how to respond to this phenomenon.
- Incentives to emigrate include low wages, dissatisfaction with working conditions, inadequate practice environment, excessive workloads and lack of opportunities for professional development.
- Pull factors include the free circulation of persons within the EEA for citizens of member states, easy access to work permits, common or easily learned language, and the presence of a diaspora in a destination country.
- Flows for doctors and nurses vary in volume over time, and in countries of origin and destination. Policy responses also vary from country to country.
- As each country situation is specific, policies dealing with migratory flows should be tailored to labour market conditions, migration trends, and institutional capacity

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