World Health Organization
REGIONAL OFFICE FOR Europe

SMALL COUNTRIES INITIATIVE

Human resources for health in small countries: developing and sustaining postgraduate training

Policy brief

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Abstract

This policy brief focuses on the challenges that small countries in the WHO European Region face and the opportunities they avail themselves of to develop and maintain postgraduate specialist training in the health sector. The brief reviews recent evidence on specialist and postgraduate training of the health workforce in small countries and illustrates examples of good practice to emulate and build on, as well as tools available to measure and ensure high standards of specialist training. It also highlights the need for small countries to participate in international collaboration and networking to be able to overcome challenges related to postgraduate specialist training over the longer term.

Keywords

POSTGRADUATE TRAINING
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SMALL COUNTRIES
ACCREDITATION
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DIGITALIZATION

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Executive summary

Small countries invest heavily in their human resources to sustain and operate essential sectors of their economy. This policy brief focuses on the challenges that the small countries participating in the WHO European Region Small Countries Initiative (SCI) face and the opportunities they avail themselves of to develop and maintain postgraduate specialist training in the health sector.

Small countries face particular challenges due to their small markets, lack of competition and limited choice of service providers and products, as well as to educational monopolies, emigration and restricted training opportunities. Hence, investing in the training and professionalization of the health workforce is an important sustainable and long-term policy option that has been on the policy agendas of the European Union (EU) and WHO for the past few years.

This report reviews recent evidence on specialist and postgraduate training of the health workforce in small countries and illustrates examples of good practice to emulate and build on. It reviews recent evidence on specialist and postgraduate training, such as accreditation, continuing medical education (CME), revalidation and certification. At the same time, it examines contemporary and innovative means of consolidating and reinforcing specialist training using digital and virtual techniques, off-shoring and networking.

The brief also examines several policy options open to small countries, such as the adoption of a collaborative approach through capacity-building partnerships, graduate mobility, and funding mechanisms, and the linking of innovative health-service development with human-capital needs and data sharing. The role of international agencies, such as EU, the Organisation for Economic Co-operation and Development (OECD) and WHO, is also highlighted as an important facilitator and enabler of collaboration between small countries, training institutions and health-service providers. Additional research and investment is required to ensure a longer-term outlook for human-resources development in small countries.

Context and importance of the issue

Introduction

Investment in human resources and the development of human capital are the cornerstone of health-systems policy. The professionalization of the health workforce characterizes one of the main strengths of the health sector where graduates comprise over 60% of all staff in most countries. Over time, due to the increasing specialization of services and technological advances, postgraduate and specialist training have become indispensable to meeting the increasing demands and expectations of a modern health service. Each health-care system invests heavily in its workforce, leaning towards graduate and specialist training. This investment has served well in the context of the context of the coronavirus disease (COVID-19) pandemic where additional strain has been placed on health-care workers over the past two years. However, not all countries have the capacity, expertise and critical mass to develop and sustain postgraduate-training programmes. In today's globalized environment *(1)*, where larger countries also encounter challenges in doing so, the difficulties faced by small countries are that much more diverse and complex.

Commissioned by the Ad hoc Working Group on Human Resources for Health of the SCI as part of its theme on better human-resource management, and in the light of the regional framework for action in the domain of education and performance *(2)*, this policy brief examines the many issues surrounding postgraduate training in small countries.

Terminology

In covering the topic of postgraduate training for health professionals, this policy brief describes their clinical and didactic training and its importance to their professional development and progression. It usually involves competency-based medical and clinical education *(3)*, which encompasses the acquisition of a variety of skills, including the ability to communicate, transfer knowledge, gain technical and clinical proficiency, practise clinical reasoning and judgment, manage emotions and attitudes through reflective practice, and develop an understanding of professional and personal values. Such training familiarizes the recipient with the terminology specific to the field in question and invariably leads to formal qualification. Postgraduate training also includes residency programmes, which refer to training at specialist level in a medical or clinical speciality area in a clinical facility. It is usually part of a specialist training programme at postgraduate level, covering most medical and health-related specialities and linked to service-level requirements and needs in accordance with the employment policies of a region or country *(4)*.

This brief deals with postgraduate training in small countries, which have particular challenges and needs due to their population size. The countries participating in the WHO SCI *(5)* are Andorra, Cyprus, Estonia, Iceland, Latvia, Luxembourg, Malta, Monaco, Montenegro, San Marino and Slovenia. The Autonomous Region of Madeira (Portugal) also contributed to this process *(6)*.

Why study this issue?

The challenges small countries face in the provision of health services have been studied extensively in the past decade. This follows the realization that these countries deal with unique difficulties in terms of their economy, natural resources, small markets, natural monopolies and lack of competition, limited choice of service providers and products, diseconomies of

scale and limited human resources. Lately, these issues have been included in EU and WHO policy agendas.

Compared to their larger counterparts, small countries are more likely to experience the above constraints. This often leads to the inability of the latter to achieve sustainable volumes of activity, justify certain treatments (because of inadequate numbers of patients) and offer a full range of specialist services. They may also experience limited contributor pools of population resources (gene types, organs, etc.) and cases of rare diseases. In terms of human resources, small countries experience deskilling, exodus of expertise, difficulties in maintaining proper training programmes and a lack of career prospects. In addition, they often have difficulty in generating a sufficient number of experts in health institutions who have time to dedicate to teaching and mentoring.

Policy implications

Investing in their human resources to mitigate and counterbalance the above-mentioned challenges has thus been a priority for many small countries. This policy brief aims to provide an understanding of how they are addressing the critical issue of providing postgraduate and speciality training for health professionals and their policy options on how best to improve the organization and delivery of such training through effective cross-country collaboration. As the provision of a full suite of postgraduate and speciality training can present challenges for small countries, collaboration with other countries to harness the necessary input and clinical experience is necessary.

Postgraduate training in small countries: synthesis of the evidence

This section reviews the challenges related to postgraduate and specialist training in small countries, and the possible solutions deployed. A literature review was conducted, using the key words, "postgraduate", "specialist", "training", "education", and "small countries and states". Grey literature in the form of national reports, policy papers and legal/regulatory documents was also perused.

Accreditation

The accreditation of professional training programmes is widely adopted to ensure standards are met and maintained *(7)*. Accreditation and ensuing certification are essential elements of any training programme, and all adopted initiatives need to assure their quality and standards through accreditation *(8)*. WHO defines accreditation as "a voluntary peer-review process designed to test the educational quality of new and established medical (and health-training) programmes" *(9)*. According to the International Institute of Medical Education, accreditation is "a self-regulatory process by which governmental, nongovernmental, voluntary associations or other statutory bodies grant formal recognition to educational programmes or institutions that meet stated criteria of educational quality" *(10)*.

Objective 1.1 of the WHO *Global Strategy on Human Resources for Health: Workforce 2030* (2016) states that, by 2020, "all countries will have established accreditation mechanisms for health training institutions" *(11)*. According to WHO, accreditation boosts the standards and capability of training programmes leading to the formal certification of health-care professionals. Accreditation in medical education has been driven by the rapid changes in

medical practice, health-system changes, globalization, and the mobility of health professionals across borders *(12)*.

Over 90 countries are registered with the Foundation for Advancement of International Medical Education and Research (FAIMER) *(13)* and many of these have introduced accreditation. There are numerous accreditation bodies, including the Accreditation Commission on Colleges of Medicine of the Republic of Ireland *(14)*, the Australian Medical Council (for Australia and New Zealand), the General Medical Council of the United Kingdom, the Liaison Committee on Medical Education and the Accreditation Council for Graduate Medical Education in the United States of America (established in 1980), and the Caribbean Accreditation Authority for Education in Medicine and other Health Professions. The Thematic Network on Medical Education in Europe has adapted the accreditation standards of the World Federation for Medical Education, which developed its criteria in collaboration with WHO *(15)*.

Historically, however, there are difficulties associated with accreditation as attested by a conference on the accreditation of health professions education organized by the WHO Eastern Mediterranean Region in Manama, Bahrain, in 2003. At the time, many countries reported challenges in adopting formal accreditation structures and programmes, including lack of leadership and political commitment, funding gaps, lack of clarity in job roles and career pathways, inadequate teaching and learning facilities and other related technology resources, the absence of a teaching hospital and/or robust primary-care services, and understaffing *(16)*. Thankfully, many of these issues have since been resolved though they still occur occasionally, especially in remote regions or small countries.

Participatory approaches enhance postgraduate knowledge

National accreditation agencies for medical, nursing and health-training schools and other training programmes in the countries covered by this report include: the Cyprus Agency of Quality Assurance and Accreditation in Higher Education; the Cyprus Nursing and Midwifery Association; the Estonian Quality Agency for Higher and Vocational Education; the Quality

Agency for Higher Education of the Academic Information Center of Latvia; the National Commission for Further and Higher Education in Malta; and the National Agency for Quality Assessment and Accreditation [Agencia Nacional de Evaluación de la Calidad y Acreditación] of Spain *(13)*, covering Andorra.

Continuing professional development

Most professionals are now obligated to keeping themselves updated professionally and skills-wise to maintain the highest standards of clinical practice and care. Various initiatives at the national and regional/European levels have raised the prospects of continuing professional development (CPD) for health professionals. The European Union of Medical Specialists (UEMS) has long advocated a standardized and streamlined approach across various medical specialities in Europe *(17)*. At the EU level, the European Accreditation Council for Continuing Medical Education (EACCME) was established in 2000 to harmonize and set quality CPD standards, including that of CME. To date, however, this is yet to be achieved across the board *(18)*.

Currently, there are no standards governing CPD or lifelong learning in relation to the organization and management of these programmes, including methods of participation, categorization system (providing credits or points/scores), formal standards of validation and certification, and links to employers and industry. Meininger et al. (2014) found that many EU countries had adopted a harmonized approach to competency-based medical education and CPD. The duration and content of postgraduate medical-education programmes are, however, still diverse *(19)*.

CPD programmes and lifelong learning can be instrumental in attracting and retaining valuable human resources as part of a concerted capacity-building exercise. This approach was taken by the member countries of the Gulf Cooperation Council to retain locally trained graduates *(20)*.

Revalidation and certification of health professionals

To contemplate cross-border training and working opportunities, a mutually recognized system for the validation and certification of health professionals needs to be in place. The 2007 EU Directive on the recognition of professional qualifications allows for this and has led to increased mobility and the sharing of skills and expertise; however, the Directive does not cover postgraduate training or CPD-acquired skills *(21)*. Often, bilateral arrangements have been established between countries (for example, between San Marino and Emilia-Romagna region, Italy, Malta and the United Kingdom, Cyprus and Greece, and Monaco and France), recognizing postgraduate qualifications or validating postgraduate training received in the sending and receiving countries.

Globalization of health education and training

The globalization of health care is now a reality. "Cross-border care", "outsourcing" and "offshoring of health-care services" are terms used frequently to illustrate the provision of health care across borders and territories. Concomitant with the provision of health care, intercountry and regional medical education and training have followed suit. However, while globalization often implicates income generation, medical education needs to be included among the relevant social and public obligations *(22)*.

Distance and virtual learning

Where the required resources, expertise and critical mass of patients are unavailable locally, distance learning, using virtual and digital methodologies, has proven to be invaluable in

bridging the geographical and expert divide. WHO recognized this early on when advocating a common approach to medical education across countries and regions *(23)*. Before the COVID-19 pandemic, distance learning was not heavily ingrained in clinical-training programmes *(24)*. COVID-19 has completely changed this, however, and on-line methods and modalities have now superseded in-person training in most university- and postgraduate-training programmes *(25)*.

The digitalization of learning

Although the digital age has brought many advantages and advances, there are constraints involved, linked to societal norms. These have been widely documented, the most prominent being limited digital infrastructure, inadequate technological resources, lack of funding opportunities, the need for a more traditional approach towards learning and training, and a general lack of technical support and expertise *(26)*.

Offshoring education and training

Offshoring is often sought as an alternative to home education in situations where resources or expertise are inadequate for undertaking and sustaining local training initiatives, or as a means of bypassing regulatory oversight. Offshoring usually occurs in regions or countries that are geographically, culturally, or linguistically close to the home country *(8)*.

A survey of over 6000 trainees in obstetrics and gynaecology from 25 member countries of the European Network of Trainees in Obstetrics and Gynaecology (ENTOG) found that most of them would have the opportunity to train abroad if they so wished, although further harmonization in training requirements, standards and assessment methods would be required *(27)*.

Creating an international value chain

Value chains in education are intercountry or regional networks that establish and promote training and employment opportunities across different countries or regions. They usually consist of feeder institutions, an offshore training facility (usually a university), clinical-rotation hospitals, and workplaces, which recruit graduates (Box 1) *(28)*.

Box 1. The use of educational clusters to promote and foster intercountry and regional training opportunities

The Caribbean offshore medical and health-sciences universities' cluster is a leading example of education-related interregional cooperation between North America and the Caribbean countries. It is grounded in a voluntary accreditation system, which ensures the quality of medical education and, at the same time, allows the member countries and institutions to adapt it to their own regulations and requirements. Indeed, this network's coordinated and harmonized approach to accreditation and training facilitates a collaborative rather than competitive approach. Furthermore, participating countries can synchronize their educational and training requirements for health professionals, which benefits mobility and facilitates exchanges of skills and expertise across the network.

Another example of an active training-and-research network is the U21 Health Sciences Group, which was established in 2000. This network comprises many allied health specialities, as well as dentistry, health and rehabilitation sciences, pharmacy, public health and midwifery. Its purpose is to serve as a framework for opportunities in collaborative research, information exchange, and resource sharing across the health sciences. A foremost example of a voluntary

collaborative initiative, the U21 Health Sciences Group spans 19 academic institutions across 13 different countries and 6 continents *(29)*. It has identified several challenges, including communication and coordination issues between clinical placements, caseload misalignment, lack of proper data collection for practice placements, and spiralling costs *(30)*.

Residency and specialist training

Several attempts have been made to harmonize and standardize postgraduate training across Europe *(31)*. While most specialities have common platforms in terms of duration and assessment methods, significant differences in the organization, content, and governance of postgraduate training in some specialities, like internal medicine and psychiatry, still exist *(32,33)*. The same could be said of dental specialities for which better streamlining and common standards have been worked on over the past few years *(34)*. There are also organizational differences in postgraduate training in obstetrics and gynaecology across Europe, including duration of training, mode of assessment and entry requirements. Harmonization of training is deemed important to improve women's health care and facilitate the mobility of trainees and specialists in obstetrics and gynaecology across Europe *(35)*.

Oldmeadow et al. (2007) noted that the overall competence of allied health professionals (with a focus on physiotherapists) improved substantially following the delivery of structured specialization programmes for this category *(36)*. There are different formats of and paths to specialization in allied health care, although not many countries have reached this stage yet. In Australia, it requires formal postgraduate training and qualifications at master's and doctoral levels. In the United Kingdom, specialist training is offered through clinical-service provisions, leading to statutory accreditation by the Health and Care Professions Council. In Singapore, allied health professionals must apply for accreditation to the Specialist Accreditation Board following specialist training and qualification. Moreover, it is planned to make it mandatory that specialist accredication include the stipulation that allied health professionals take part in continuing professional education (CPE) activities to revalidate their practising certificates *(37)*.

Bilateral and multilateral agreements on mobility for training

The mobility of the health-care workforce has been moderated by several international and regional instruments, such as the WHO Global Code of Practice *(38)*, the International Council of Nurses' position statement on ethical nurse recruitment *(39)*, and the World Trade Organization's general agreement on trade in services (GATS) *(40)*. There are also regional arrangements in place (North American Free Trade Agreement, Caribbean Community, Commonwealth countries, Gulf Cooperation Council, Asia–Pacific Economic Cooperation, EU). Where these arrangements fall short, or cannot be implemented, bilateral or multilateral agreements have been put in place to facilitate the transfer of health personnel for training purposes. Examples of these include agreements between Andorra and Monaco (Box 2); the United Kingdom and India, Malta, the Philippines, South Africa and Spain; China and Singapore; Kenya and Namibia; and Emilia-Romagna, Italy, and San Marino *(41)*.

Box 2. Bilateral collaboration project between Andorra and Monaco

A bilateral collaboration project between Andorra and Monaco, encompassing a workshop on orthopaedics for older people, was organized in Andorra in March 2019, involving the Ministry of Health of Andorra, the Andorran Health Care Service and the Ministry of Health and Social Affairs of Monaco. This type of collaboration has been made possible thanks to the WHO SCI (5).

Updating health workers' knowledge and hands-on skills is crucial

Challenges in small countries

There is a general paucity of literature on the challenges faced by small or micro countries with respect to adult medical education. This was first broached as a topic of concern and interest in 1995, when a conference held in Malta highlighted the main issues surrounding adult continuing education in small countries *(42)*. These related to the multifunctional use of resources, lack of expertise, reskilling and retraining of workers, and emigration of valuable human resources. Also, adult continuing education is more difficult to sustain in small countries due to the higher cost of services per capita. Small countries need to avoid duplication of services and effort and to minimize waste and maximize the multifunctional use of scarce resources, such as facilities, educational resources, expertise, and equipment *(43)*. Due to the small size of their populations, the demand on the health services is often neither large nor constant enough to warrant having fully specialized staff in all areas, leading to the sharing of tasks and skills.

Educational monopolies in small countries

Monopolies usually exist naturally in small countries due to their small size and small markets. Many of them have limited tertiary and postgraduate educational institutions. Others, with easy access to educational institutions and training facilities abroad (for example, Monaco and San Marino), would usually have limited tertiary-level training institutions. Of course, the advent of the digital age and on-line learning and has changed all this so that training opportunities have flourished, and education has become a truly globalized industry.

Migration of trainees and experts

The movement of trainees and experts across territories is not new, certainly not to small countries, which have long been net exporters of labour power. This has been the case, for example, for Cyprus, Malta and San Marino. These demographic shifts have become more pronounced because of the effect of increased globalization on our economies and

labour forces. The migration of health professionals has been on the agenda ever since the EU opened its internal borders. A study by Gotlib et al. (2012) found that because of an increased demand in many EU countries, many physiotherapists found it easy to find employment outside their own countries *(44)*.

The migration of health professionals from developing countries and regions to industrialized countries is a long-standing reality. To mitigate and reverse this trend, a greater understanding of the motivations for this movement is needed. Imran et al. (2011) found that health professionals move away from their countries to achieve professional excellence and expertise, establish themselves and their careers in lucrative markets and, indeed, undergo postgraduate and residency training. Financial reasons and job opportunities are also key motivators *(45)*. Experts and health-care professionals who leave their countries of origin for better job opportunities in larger countries often do not return. This is also true of trainees from small countries who usually prefer to remain in the larger countries rather than return to poor job prospects at home *(46)*

Overeducation

Overeducation rates at different levels of attainment reflect the composition of the labour force in a country and the robustness of its vocational-education-and-training (VET) and graduate-training programmes. The lower the overeducation rate the better youth is assimilated in the respective profession. These rates also serve as a proxy of professional mobility in a country. Statistics for all countries are not readily available; however, as Table 1 illustrates, the pattern across small countries in Europe is not consistent.

Table 1. Youth educational attainment and overeducation rates for International Standard Classification of Education 3–4-level graduates, selected countries, 2000 and 2016

Country	**2000** (%)	**2016** (%)
Estonia	0.002	0.102
Iceland	0.633	0.372
Latvia	0	0.081
Luxembourg	0.149	0.131
Slovakia	0	0.019
Slovenia	0.116	0.010

Source: Delaney J et al *(47)*.

Limited specialist programmes

Due to their size, small countries have difficulty in developing and maintaining the full raft of specialist training available in larger countries. This is especially so in the case of subspecialities, or special areas of competence, for example, specialities with lower numbers of patients and a lower prevalence of disease burden. Palliative care is one such speciality where training has only been developed in under half of the countries in the WHO European Region *(48)*.

Policy options

Capacity-building partnerships

Collaborative, capacity-building partnerships have been in place for several years across different regions and countries. Usually, these take the form of residency training programmes, bi-institutional twinning partnerships, subspeciality training, postgraduate and post-specialization fellowships, and procedures or training courses and programmes that are implemented with online support. These collaborative efforts are also sometimes linked to providing access to clinical and surgical care that would otherwise not be available *(49)*.

Partnerships of this kind between institutions and governments, such as that developed between the Health Economics and Financing Programme of the London School of Hygiene and Tropical Medicine and partner institutions in South Africa and Thailand, promote close relationships between practitioners and researchers; however, funding and political commitment are also essential if they are to be sustained *(50)*.

Examples of partnerships

A bilateral partnership between Guyana and the United States, which commenced in 2012, facilitated the development of a postgraduate-training programme on obstetrics and gynaecology for local doctors with the aim of raising standards and meeting the Millennium Development Goals. This collaboration involved the Ministry of Health of Guyana, the Georgetown Public Hospital Corporation and the University Hospital Case Western Reserve in Cleveland, Ohio. The programme was based on several didactic and clinical modules, trainees' case logs, formal continual assessment and evaluation, and formal certification, leading to the engagement of consultants *(51)*.

Free movement of professionals

In late 2013, Directive 2013/55/EU on the mutual recognition of professional qualifications was revised, directed at enabling the free movement of EU citizens by facilitating professionals qualified in one EU Member State to practise in another. The revision brought about some important changes, such as the introduction of the European professional card (a passport of sorts containing their qualifications and professional registrations), the establishment of a common training framework and test, and CPD lifelong learning programmes.

Disciplinary procedures and safeguarding of patients

Greater movement of physicians and other health professionals across borders has also brought about additional challenges in relation to disciplinary action and the sanctioning of professionals. The lack of a standardized approach and diverse procedures can lead to information and communication gaps between relevant authorities, which could impede the exchange of professionals across jurisdictions *(52)*.

COVID-19

Studies have found that the COVID-19 pandemic has severely disrupted most specialist and postgraduate-training programmes in many regions and countries. Clinical training has been curtailed and it has been necessary to follow didactic teaching on line. The formats of assessments and examinations have also been radically changed *(53)*.

Summary analysis of case studies from small countries

Method

In 2019, as part of the preparation for this report, eight small countries and one region in the WHO European Region (Andorra, Cyprus, Estonia, Iceland, Latvia, Malta, Monaco, San Marino and Madeira (Portugal)) were asked to provide feedback on the status of their postgraduate training. This covered several aspects, including a general overview, the organization and delivery of postgraduate-training programmes, challenges met (including brain drain), innovative practices, local and international collaboration, data management and the role of WHO in facilitating initiatives between the countries. Each case study was analysed with the assistance of the NVivo 12 data analysis programme, using a thematic approach. The six themes and six subthemes that were extracted are reviewed below. Additional information was sought in official reports and other grey material from national sources.

Content and delivery of postgraduate training

Mode of delivery

While most countries have the capacity to deliver postgraduate-training programmes for health professionals, some of the smaller ones, such as Andorra, Monaco and San Marino, use a different approach due to lack of capacity and expertise and small population size. Undergraduate training for nurses is, however, available in these countries. Where postgraduate training is not available, trainees usually seek possibilities abroad, mainly in neighbouring countries (for example, trainees from Monaco in France; from Andorra in Catalonia (Spain) or France; from San Marino in Italy (Emilia Romagna region); and from Cyprus in Greece).

The feedback provided showed that the countries follow a mixed model of postgraduate training, whereby training is delivered both locally and abroad. For example, Andorra's hospital delivers regular professional-development courses, which are often carried out in bilateral collaboration with hospitals in Catalonia (Spain) or France. Cyprus also follows a mixed model for the delivery of postgraduate training for health professionals. While undergraduate training of general nurses, psychologists, pharmacists, doctors, physiotherapists, midwives, mental-health nurses, psychologists and pharmacists is carried out in Cyprus, and postgraduate training in psychology, medicine, nursing and midwifery specialities at doctoral level (MQV levels 7 and 8) is also provided by local universities in the country, there is a long-standing ongoing collaboration with Greece on both the accreditation of these courses and specialist training undertaken in Greece. The same can be said of Iceland where, while nurses undergo most of their postgraduate training locally, physician training mainly takes place abroad (except for the first two years of training for some specialities). Latvia is one of the few exceptions where, currently, all postgraduate training is delivered locally without reliance on or collaboration with other countries, although this is not excluded for the future. Madeira also offers a mix of learning opportunities, including e-learning, regional academic and training programmes, and degree programmes abroad for health professionals. In San Marino, the Institute of Social Security provides skills-based training for physicians (two-year courses), pharmacists and biologists (six-month courses). Changes are envisaged for training in family medicine where a new law will specify the duration and type required.

University- or ministry-based training

There is a mix of university-based postgraduate training and/or ministry-driven initiatives. In Estonia, postgraduate training is organized by the main university in collaboration with 20 hospitals and 75 family-medicine practices around the country. Many of the courses are

funded by the Ministry of Social Affairs and the Estonian Health Insurance Fund. Latvia had a dedicated postgraduate-training centre for health professionals up to 2009, which was under the responsibility of the Ministry of Health. The centre was then reorganized whereby some of the coordination and funding functions were assumed by the Ministry of Health with the support of additional funding from European Social Fund (ESF) sources. Malta has a fully-fledged local postgraduate-training centre, which provides specialist training for doctors, covering 35 recognized specialities and 23 subspecialities. Malta is planning to establish similar training centres for nurses, midwifes and allied health professionals. Currently, there are many postgraduate courses at the post-qualification-diploma and master's levels for these categories of staff, run by the University of Malta and other universities.

Many countries commented on the need for better coordination and collaboration between tertiary-education facilities (universities, postgraduate-training centres), service providers and the ministries or agencies responsible for training and funding.

CPD/CME

Although CPD and CME are not considered formal or integral parts of postgraduate training, they still merit mention since they are often intertwined with it. Many jurisdictions offer CPD and professional development courses through their health services. Andorra's hospital facilitates CME and training for its staff locally or in neighbouring countries. In Cyprus, accredited clinics organize continuous medical development for physicians as part of a pursuit to improve the quality of services provided to patients, while in Monaco, the College of Continuing Medical Education delivers teaching credits recognized by the European Credits Transfer System. Some countries commented on the important roles of nursing schools, universities and hospitals in organizing and funding the continuous education of health workers.

Commonalities

There were some common traits in the feedback provided by most, if not all, of the countries. These show that smallness of size and/or population is not always conducive to the development and sustenance of postgraduate-training programmes. Many small countries do not have a fully-fledged medical school, a health-sciences faculty, or well-developed postgraduate-training programmes. Almost all countries were experiencing certain deficiencies in teaching and/or mentoring staff in their health institutions, due to heavy workload or lack of expertise. Consequently, many of them have opted for a mixed-model approach, whereby both undergraduate and postgraduate training are organized and run both locally and abroad. This, however, creates a certain reliance on larger or neighbouring countries and requires a framework for the validation and accreditation of training undertaken outside the country.

Moreover, small countries are more dependent on the multiple actors involved in postgraduate training, such as ministries for health, education and finance, health-professional associations, universities, and other players directly or indirectly involved in training and employment. For this reason, many countries are undergoing certain reforms and the reorganization of the legal and regulatory aspects of postgraduate training.

Governance

Planning and forecasting

Human-resources planning is required as part of a strategic health-planning process. Investment in the training and education of the workforce is key to ensuring an adequate stream of appropriately qualified staff. In addition, given that it takes years to train a health professional,

forward planning is essential and often linked to service provision. Andorra is developing a continuous education plan and identifying training needs and programmes available locally and abroad as a basis for setting up agreements with teaching centres abroad. Most of Cyprus's postgraduate training is delivered by universities. Usually, they plan their intake and throughput based on their training capacity and the popularity of their courses and not necessarily on the health-care needs of the country. Furthermore, specialist training is limited by the available speciality positions in clinics accredited by the Greek Central Board of Health (KESY) (Greece's regulatory agency). For these reasons, a needs assessment is planned in collaboration with universities in Cyprus and abroad, as well as with accredited clinics, to identify areas where more specialist training is needed. This assessment will also include specialist training that could be carried out by health-care providers in Cyprus. Furthermore, the introduction of logbooks for the accreditation of training in each speciality is also in the pipeline. Estonia carried out a similar exercise to compare university-based postgraduate training available in the country with that in other European countries, which led to changes in the way postgraduate training is organized there.

Iceland has started working on regular plans to forecast human-resources needs in health care. This should be part of a country's national policy on human resources for health, emphasizing the importance of ensuring the provision of an adequately trained and skilled workforce. Similarly, Madeira feels a pressing need to develop a human-resources strategy, including an oversight of how to improve the quality of life of its staff.

Data

The dearth of data on postgraduate training is a factor common to many small countries, placing limitations on specialist-capacity planning, especially that linked to population-health needs. Several countries, including Andorra and Estonia, have expressed difficulties in correlating specialist-training capacity with health-services needs. Cyprus, Malta and San Marino also expressed the need to consolidate their databases on both undergraduate and postgraduate studies, in terms of numbers, levels of training, and qualifications obtained. Cyprus admitted that this information would be useful in planning the specialist-training needs of doctors and other health professionals. Although Estonia has several databases on these needs, a link to postgraduate-training needs is still not available.

Moreover, Estonia, Iceland, Latvia and Madeira noted that information on the work–life balance, the outcome of specialist training in terms of entering working life, work placements, career progression and working conditions is also needed. Iceland acknowledged, however, that small countries might not have the expertise and capacity necessary to collect the required data. This creates the need to identify priorities for the collection not only of quantitative data, but also of qualitative data, including information on the health professional's perspective on the quality, availability, and adequacy of the postgraduate training undertaken, as well as on any improvements that are necessary. This is especially relevant in cross-border training initiatives. Data on work placements, type of postgraduate training undertaken, number of and reasons for dropouts, turnover of trainees, job changes, work opportunities, and post-residency conditions all need to be collected, analysed and shared.

The legal aspects of regulation and accreditation

Due to size and capacity limitations, many small countries seek to mirror, or even sometimes marry, their regulatory and accreditation functions to those of a neighbouring country, which shares its culture, language, history and legal attributes. This used to be the case for Malta and the United Kingdom and, to a certain extent, is still prevalent for Cyprus and Greece and for Monaco and France. On the other hand, although there is a long history of close collaboration between San Marino and Italy (particularly Emilio-Romagna), regulatory

alignment is not yet a reality. There is, however, discussion on the possibility of establishing certain legal provisions to facilitate mutual recognition of qualifications and training by San Marino and EU. This is especially relevant since, as yet, there is no formal certification process in place for postgraduate specialist training in San Marino.

Box 3 describes the outcome of a special relationship between Cyprus and Greece regarding accreditation of training. The situation is similar for Monaco and France where nursing training in Monaco is analogous to that provided in France in terms of course content, teaching methods and qualification. In addition, there are legal provisions between Monaco and France to allow nursing training in Monaco to be automatically recognized and validated by France. This in turn allows students/graduates to have their diplomas recognized in the EU (given that Monaco is not a member of EU).

Box 3. Accreditation of training in Cyprus

The unique relationship between Cyprus and Greece is reflected in the related regulatory aspects of specialist training whereby training in Cyprus is based on an accreditation system developed by the Greek Central Board of Health (KESY). The Cyprus Council of Recognition of Higher Education Qualifications (KYSATS) is now the competent authority in Cyprus for the recognition of higher- and tertiary-education qualifications.

While regulation of the medical profession is well established, that of other professions is still in its infancy. Latvia will introduce a regulatory framework for the general nursing profession by the end of 2022. Malta has a long-established training framework for medical specialists, including a Specialist Accreditation Committee, which regulates and sets training standards. Similar regulatory structures for nursing and allied health have only been created recently.

The monitoring of training standards, the proper acquisition of competences and skills, and the assessment of curriculum content and development are important aspects of the regulatory and legal portfolio of every country. Latvia is also seeking to improve the monitoring function, not only of its residency programmes, but also of residency work in hospitals and of other service providers in the country. In fact, data are available to inform the enforcement of the service and employment conditions in national health-care institutions for three years after residency.

Postgraduate training, health-service needs, and innovation

Small countries do not have the luxury of investing in training without looking ahead. Training and health-service needs are intricately linked as one sustains the other. Training initiatives and programmes are founded on the established needs and requirements of the health service. Training needs to be translated into employment and job incentives. This is the case for Andorra, where educational activities were transposed into job and curricular incentives for the health professionals.

Iceland has acknowledged the need to invest in its workforce by funding training and education in clinical specialities and areas experiencing staff shortages, especially those serving vulnerable communities. Malta is also developing a human-resources plan to ensure that all specialities and services are adequately catered for through undergraduate education and postgraduate training.

Postgraduate training is also a driver of continuous innovation and improved performance.

This is generated through continuous improvements as health professionals keep abreast with the latest medical developments through CPD and postgraduate-training initiatives. Madeira is positioning itself to be the "data warehouse of Europe", using big data in the health-care system. Universities here focus on training in artificial intelligence, biomarkers and digital health as innovative areas for specialization.

Bilateral and international collaboration

The countries participating in the compilation of this brief shared several examples of good practice in international collaboration. It is important to illustrate these since cooperation beyond their borders often provides small countries with a lifeline to service development and innovation. Cooperation can also be bidirectional, as demonstrated by the international training programme, Medical Response to Major Incidents, developed by Madeira (Portugal) and exported to other countries (such as, Croatia, England (United Kingdom), Israel, Italy and Sweden), and by the bilateral training arrangements between Malta and several institutions abroad (Box 4).

Box 4. Bilateral training arrangements – Malta

Malta has a long history of setting up bilateral training arrangements with institutions abroad. Many of these exchanges have originated through the personal initiatives of health professionals who establish relationships with their peers abroad. These contacts are formalized and institutionalized through bilateral agreements between the Ministry for Health of Malta and the training institution or health-service provider abroad. For medical specialists, this process is coordinated by the Post Graduate Medical Training Centre, but nurses, midwives and allied health professionals have also benefitted from similar provisions.

Monaco and San Marino both have long-established relationships with their respective neighbours, France and Italy. For health professionals in Monaco, France also serves as a conduit to access training opportunities, not only in France but also beyond. This is true for many specialities: nurses, for example, have the opportunity to undertake state-sponsored courses towards state certification in surgery or anaesthesia in neighbouring French colleges. Given that San Marino does not have postgraduate-training programmes, it is dependent on collaboration and is aligned with Italian universities for specialist training (with the exception of general practice for which San Marino is planning to launch its own specialist-training programme for family doctors). Geographical proximity, as well as linguistic and cultural closeness, allow local professionals in San Marino to access training provided in France and Italy without difficulty. This bilateral cooperation accelerates career progression and boosts the motivation of health professionals by providing an avenue for training, professional development, and promotion.

Mobility of staff – the brain drain

Lack of the prospect of local specialist training contributes to the outflow of health professionals from a country. Small countries are usually net contributors of human resources to larger countries. While many factors (such as career opportunities, salary considerations, working conditions, socioeconomic issues, and personal reasons) contribute to this phenomenon,

An influenza laboratory in Cyprus

training opportunities, or the lack thereof, certainly constitute one of the major reasons for the mobility of professionals between countries and regions.

Most small countries have experienced brain drain and sought ways to curtail the depletion of health-care professionals in their ranks. Cyprus has approached this phenomenon by seeking to collaborate increasingly with well-known universities, hospitals and training institutions overseas in service areas of need, thereby offering key positions for staff in these same areas after completion of their studies. This approach also serves to improve training standards locally, creating incentives for staff to train in Cyprus rather than abroad. For this reason, Cyprus has three public and four private universities, which offer graduate, postgraduate and doctoral degrees related to health occupations.

Many countries attempt to stem the loss of highly valued professionals by offering them bursaries for studies abroad in the form of loans, grants or subsidies on the condition that they return home on completion of their studies. In line with their health needs, Iceland, Latvia and Malta all have schemes in place, which sponsor their trainees at the postgraduate level in various clinical fields (Box 5).

Box 5. Reducing brain drain in Latvia

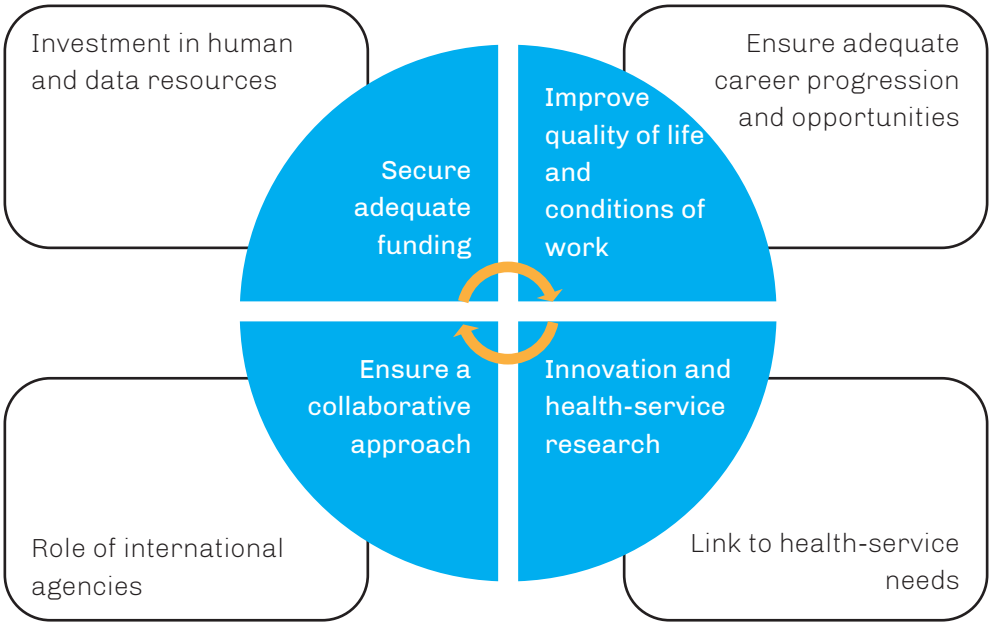
To attract human resources to the national health-care system and reduce brain drain, Latvia provides state-paid studies for trainee physicians in a wide array of medical specialities (up to 45 basic specialist and subspecialist training courses). On average, around 220 trainees enrol in postgraduate education each year. On completion of their studies, trainees are required to work for at least three years in government health-care facilities.

Some small countries, such as Estonia, Monaco and San Marino, attempt to attract graduates back to base by creating more favourable working conditions, including better salary packages. Estonia has low levels of brain drain, achieved by creating better salary conditions and working environments. According to the feedback from Monaco, almost all graduates return home after specialization. Also, while many of the newer EU Member States (Cyprus, Estonia, Malta) experienced an initial wave of emigration by doctors and nurses, this trend was eventually reversed by instituting many of the provisions mentioned above.

Policy options

Several solutions have already been discussed and presented in the previous sections. This section builds on these and presents a consolidated approach to postgraduate policy development (Fig. 1). While not all the proposals may necessarily be relevant or applicable to all small countries, the measures included in the policy framework are feasible for and attainable by all of them. The purpose of this framework is to facilitate the development of a pragmatic plan to ensure a sustainable and robust postgraduate-training programme in each country.

Fig. 1. Framework for postgraduate-training policy development



Policies to ensure adequate funding

While adequate funding is the basis for the proper provision of health care, many countries have invested specifically in programmes that facilitate the access of health professionals to postgraduate training and further career development. Iceland has created the Icelandic Student Loan Fund *(54)* to encourage studies in areas requiring more staff. Iceland believes that government should intervene directly to facilitate people's access to education through the provision of loans, grants and similar sponsorships. Latvia also provides state-sponsored studies for physicians.

Funding opportunities are important in encouraging health professionals to pursue postgraduate and specialist training (Box 6). The financial investment in training is not usually insurmountable as the return of investment in training is much greater than the initial outlay. Small, targeted incremental amounts, coupled with a long-term strategy, will pay dividends over time.

Box 6. Mechanisms for funding postgraduate training in Estonia

In Estonia, legislation has been changed to increase oversight of the university's postgraduate-training development. The funding mechanism has also changed. Whereas previously, residents' salaries were paid from the state budget, as of 2020, they are financed through the Estonian Health Insurance Fund.

Investment in human and data resources

Training and education are resource intensive. Substantial investment is needed to develop and sustain a training programme for health professionals. Appropriate teaching and clinical skills are required to tutor and mentor staff through their career development. The small

countries involved in the micro case studies indicated difficulties in sourcing and retaining enough training staff to sustain the full raft of speciality programmes expected in a health service. Most of them acknowledged the need to invest in teaching and training staff. The use of an academic liaison between health professionals and universities and other training institutions was deemed beneficial.

The use of health information and big data in strategic planning is a common feature among small countries. Their small size allows for the implementation of a system of shared medical records, as well as training linked to its use. In Madeira, knowledge development is supported through the deployment of digital nomads (highly qualified investigators who spend short periods of time in Madeira to promote the creation of start-ups). Similar arrangements are in place for the exchange of trainers between institutions and hospitals.

Improving quality of life and conditions of work

The attraction and retention of highly qualified staff is an important priority consideration for all small countries. Retaining the required expertise to sustain a health service also contributes towards its training needs. Besides developing robust training programmes, which would allow local staff to specialize in their own country, it has been shown that the conditions of work of trainees and specialists are an important magnet for attracting and retaining the correct expertise in the country. This is achieved through better renumeration packages and a better work–life balance, especially for fresh graduates with young families, as well as improved career and promotion prospects and socioeconomic conditions for health professionals. Many professionals return to their home countries after specialization, not necessarily due to work prospects but because of social and family considerations. These include the prospects of having a better environment and climate in which to raise children, being closer to family and friends and having a better social life. Small countries have a better chance of meeting these conditions and should exploit these assets to lure professionals back to their home bases. Madeira has long adopted this stance by acknowledging that the best way to create new knowledge in an outermost region of Europe is to promote the advantages of living there, such as better salaries, high quality of life, security and a good place to raise a family.

Ensuring adequate career progression and opportunities

Guaranteeing decent career prospects, including suitable progression and increased work opportunities, is key to attracting and retaining a professionally trained and skilled workforce, especially if the mobility of health professionals across borders is easily achievable. One of several examples of good practice in this area is Monaco's development of a system for the internal promotion of nurses, whereby specialization courses in surgery and anaesthesia for this category of health professional are sponsored. This internal promotion initiative has been shown to improve the performance of staff and motivate them to remain working in Monaco.

Innovation and health-services research

Innovative improvements in health-service delivery serve as an impetus for upskilling the workforce. This is often combined with increased investment in health-services research, which in turn consolidates the health system's professional base. Although it can be difficult for small countries to secure the funding and resources necessary for innovative research initiatives, bilateral and multilateral collaboration among them and with larger countries with more established traditions in health-services research, would contribute to overcoming these

hurdles. Such collaboration would also allow smaller health systems not only to participate, but also to take the lead in innovative approaches to health-care delivery. Thus, the health system would serve as a magnet for health professionals and specialists and in turn establish a robust training base for its graduates. Some countries have established research-based and training institutes to advance their research agenda and facilitate specialist training for health professionals. These centres of excellence serve to focus resources and expertise in a single entity, allowing for economies of scale and greater intersectoral and intercountry collaboration.

Link to health-services needs

This brief has emphasized several times the need to link investment in training to local health-service needs. Postgraduate and specialist training should serve primarily to improve and enhance the local health services, closely linked to the needs of the populations they serve. Regular forecasts of human-resources and health-care needs should be fed into the postgraduate-training requirements of the country, as was the case for the development of cancer services in Malta (Box 7).

Box 7. Malta's cancer journey

As part of the country's 10-year national cancer plan to reverse poor rates of survival from cancer and improve the quality of care of cancer patients, Malta decided to invest heavily in the training and development of professionals and specialists working in the different areas of cancer care. These include radiotherapy, medical physics, clinical oncology, screening modalities, radiography and interventional radiology, cancer-care pathways and palliative care. Implementation of the plan has started to bear fruit as cancer and mortality rates are on the decline and survival rates are steadily improving.

In Andorra, due to resource constraints, only education and training initiatives founded on established health-service needs are taken into consideration, linking the professionalization and specialization of their workforce with job opportunities and career prospects to ensure sustainability of training. Iceland has also regulated in this area, allocating its training funds mostly to clinical areas that require development and sustenance. Such action requires clear policy direction at the national level.

Ensuring a collaborative approach

Several countries gave examples of various forms of collaboration on both health-services development and postgraduate training, and specialization. Collaboration takes place at the local and regional levels, bilaterally between countries, and multilaterally through international networks. Whatever the form, the survival of the health services and the long-term sustainability of postgraduate training in small countries are more or less dependent on extensive collaboration between countries/regions. This collaboration could take many forms:

- internally between the ministries responsible for health, education, finance and research and universities, professional associations, health-services providers (hospitals), employee representatives and regulatory bodies as seen in Cypriot and Estonian postgraduate-training models;

- between training institutions, such as, the Andorran Nursing School and the Catalan Nursing School (on training midwives);
- through bilateral exchanges, such as that between Andorra and Catalonia on providing Andorran graduate nurses specialized training in Catalonia, and Catalan graduate nurses practical teaching experiences in Andorra's hospital;
- between countries on improving and consolidating the organization and delivery of postgraduate training (for example, Cyprus and Greece; Andorra and Catalonia; Monaco and France; San Marino and Emilio-Romagna; and Malta and the United Kingdom);
- through residency programmes, for example, based on agreements between small countries and larger receiving EU countries;
- through participation in European Reference Networks on the exchange of expertise and skills;
- through the development of partnerships between universities in a region/country (for example, Micronesia) and universities in EU countries;
- through the creation of professional and educational networks to facilitate training, for example, oncology or pain specialist training in San Marino and various Italian hospitals.

Countries would choose the collaborative approach most relevant to them, based on their local circumstances and geopolitical realities. Finding the appropriate niches for training and service development (for example, specializing in medical response to major incidents and disasters) and establishing partnerships with centres of excellence are important considerations. Small countries and regions could find a niche for improving postgraduate training and work together to identify mechanisms for cross-country collaboration in this area.

Small countries certainly have enough experience to show the potential benefits and positive outcomes of the different types of collaborative efforts between them and with other countries or regions. COVID-19 has provided an opportunity to illustrate, on a global scale, how virtual online technology can be used for meetings and training. This has brought about a paradigm shift in allowing small countries to connect and collaborate with other countries in all fields of health. This development is significant since it caters for ongoing training and collaboration with minimal funding and upheaval, while keeping essential resources at home for continued uninterrupted operations.

The above forms of collaboration, however, tend to be project based with limited timescales and scope. The challenge lies in creating the necessary organizational and legal framework to allow small and larger countries to take a continuous long-term collaborative approach in priority areas. This is where international agencies play a role.

Role of international agencies

International agencies, such as EU and WHO, have a key role to play in advocating and facilitating a collaborative approach between countries. There are several experiences that show how countries have benefitted from WHO interventions, such as SCI *(5)*, that bring them together to seek solutions in a number of public health areas. Such endeavours can pave the way to cooperation among countries, as well as an exchange of know-how, skills, expertise, health professionals and trainees. WHO can also assist in facilitating benchmarking and data comparison among countries, such as that which takes place annually for the WHO State of the World's Nursing report. It also provides a platform for sharing experience and expertise.

Latvia commented that WHO could assist in developing a method of measuring health-professional knowledge levels and determining the skills set and training required to reach a consistent quality standard in specialist training. WHO is also instrumental in forging bilateral relationships between countries, such as that between Andorra and Monaco. International collaborative events, including workshops and training seminars, are also valuable means of developing capacity in participating countries.

By its very mandate, the EU has several instruments at its disposal to facilitate collaboration and networking, also with non-EU countries. The case studies provided several examples of EU-sponsored initiatives. In Latvia, the professional development of health-care professionals receives financial support. This project introduced over 70 professional and non-formal education programmes in several areas, including nursing (new treatment and diagnostic methods) and medical assistance in emergency care. A total of 1370 general and pharmacy practitioners were trained. ESF funding earmarked for Regional Attraction of Health-care Professionals *(55)* also played an important role for Latvia in regional cooperation. Madeira developed a consortium budget policy in partnership with universities in Micronesia and EU Member States with the assistance of the European Commission. The focus was on small countries/regions with budgets for research and well-being interventions. In Malta, several specialist training programmes aimed at developing a postgraduate specialist training framework for allied health professionals are funded by EU funds. Erasmus, Erasmus +, the Leonardo da Vinci programme, European Cooperation in Science and Technology actions, for example, the European Network for Collaboration on Kidney Exchange Programmes, and other similar programmes have, over the years, provided structured exchange programmes to facilitate and streamline training abroad that would improve the organization and delivery of postgraduate training.

Conclusions

While postgraduate and specialist training are essential to the continued development and renewal of a health service, small countries face particular challenges in sustaining training initiatives and programmes, especially when these should be linked to service-provision needs. This policy brief has discussed the main policy issues and potential policy solutions related to the provision of robust, sustainable postgraduate-training programmes in small countries. While each small country needs to identify and meet its own specific needs, there is strength and resilience in numbers. Only through international collaboration and networking will small countries be able to overcome these challenges over the longer term.

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