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Workforce challenges in primary health care in Brazil

Brazil is struggling with a shortage and an uneven distribution of medical doctors across regions, compounded with a low credibility and recognition of the PHC specialty. To secure a greater number and distribution of primary care doctors and ensure a high-quality workforce, the first priority for Brazil is to implement a coherent workforce planning based on an objective assessment of present and future needs to govern health care human resources. In tandem, Brazil could look at the experiences of OECD countries to train more rural doctors and to provide both financial and non-financial incentives linked with a return of service obligation. A smarter use of nurses and community health workers is another option to cope with workforce gap. There are also opportunities to make the PHC specialty a mandatory requirement to be allowed to practise PHC, and to implement stronger requirements around continuous medical education.

5.1. Introduction

As many other OECD countries, Brazil is struggling with a shortage and an uneven distribution of medical doctors across regions. Practicing doctors per 1 000 population in 2019 were lower than the OECD average (at 2.3 compared to 3.5), while the distribution of medical doctor followed a North-South gradient where North and Northeast regions show a lower density of medical doctor. At the same time, the specialty of family and community medicine (FCM) is not attractive and undervalued in Brazil. Very few doctors working in PHC have undertaken specialist training. In 2018, only 5 486 medical doctors had a specialty training in FCM, representing 1.4% of all specialists in Brazil. While people living in North and Northeast regions have the highest health care needs, these regions gather less than 20% of all FCM specialists.

In recognition to these challenges, several programmes were implemented by the federal government to reduce the shortage of doctors in prioritised regions; and improve access to and quality of medical training in the country, including the More Doctors Programme (*Mais Médicos para o Brasil*). However, unfilled PHC positions is still the norm in Brazil, gaps in medical education remain between medical schools and geographic disparities in access to medical training persist. The North and Northeast regions offer the lowest levels of per capita medical undergraduate positions in the country.

This chapter examines workforce challenges for the PHC setting in Brazil. Section 5.2 describes the shape of Brazil PHC workforce in terms of the rates and ratios of medical doctors, nurses and community health workers. In Section 5.3, the chapters describes the organisation and quality of medical education in Brazil. In Section 5.4, the chapter then explores ways to improve the geographical distribution of doctors and overcome the issue of shortage of PHC doctors. Section 5.5 considers how to improve the recognition and credibility of the specialty of FCM and points out some key policy levers to strengthen the quality of medical education in Brazil.

5.2. The shape of Brazil's PHC workforce

Brazil's health workforce is characterised by a shortage and a misdistribution of medical doctors that is particularly acute in the North and Northeast of the country. Brazilian figures suggest that medical doctors do not perceive the specialty of PHC, and rural and remote areas, as attractive and prestigious. The shortage and misdistribution of PHC physicians is a common health workforce policy challenges OECD countries face. Concerns about income, opportunities for career development, isolation from peers, as well as educational options for children and professional opportunities for their spouse are leading factors of these challenges.

5.2.1. Physician density in Brazil remains lower than the OECD average, with persistent concerns over geographic distribution

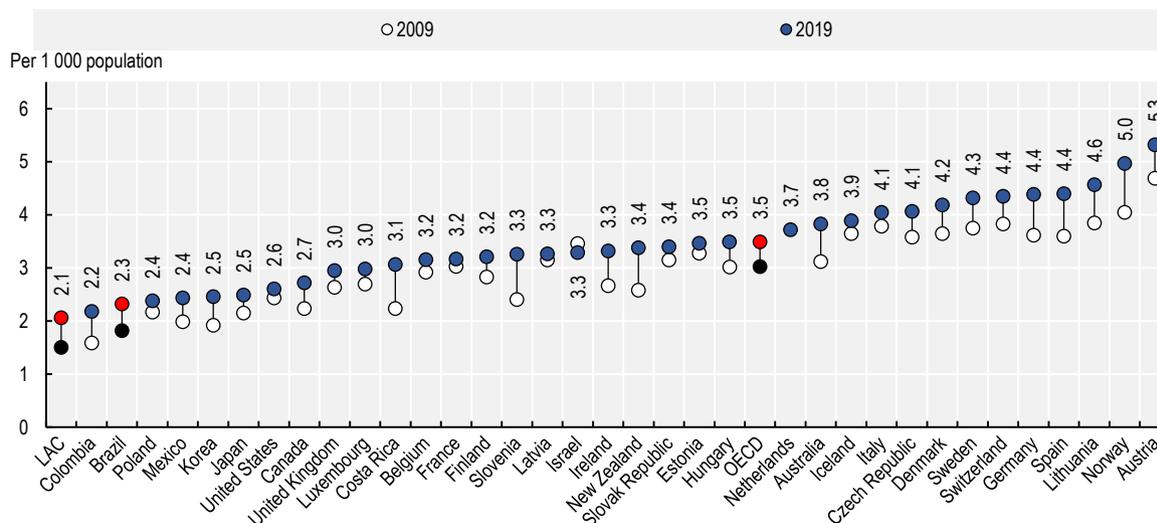
While Brazil has clearly recognised that a strong PHC is the foundation of an effective, efficient and responsive health system, the number of trained PHC physicians is well below OECD countries and of other LAC countries.

In Brazil, practicing doctors per 1 000 population in 2019 were very low compared to the OECD average, at 2.3 compared to 3.5 (Figure 5.1). This is among the lowest density, just above Colombia (with 2.2 doctors per 1 000 population) and the LAC average (2.1 doctors per 1 000 population). However, the number of doctors increased by 50% in Brazil over the past decade.

According to the Ministry of Health, there are around 60 000 medical doctors working in PHC in Brazil. Although a distinct specialty of FCM is established in Brazil, very few doctors working in PHC have undertaken specialist training in FCM. In 2018, only 5 486 medical doctors had a specialty training in FCM, representing only 1.4% of all specialists in Brazil (Scheffer et al., 2018^[1]). Medical doctors who specialise

in internal medicine also have some competencies applicable to FCM, but they also represent a small share of specialists (around 11.2%) in Brazil in 2018. Taken together, these figures suggest that Brazil struggles to attract physicians to specialise in PHC. The low attractiveness of the PHC specialties can be linked to a lower recognition, prestige, and remuneration level compared to other specialties.

Figure 5.1. Doctors per 1 000 population, 2009 and 2019 (or latest year available)



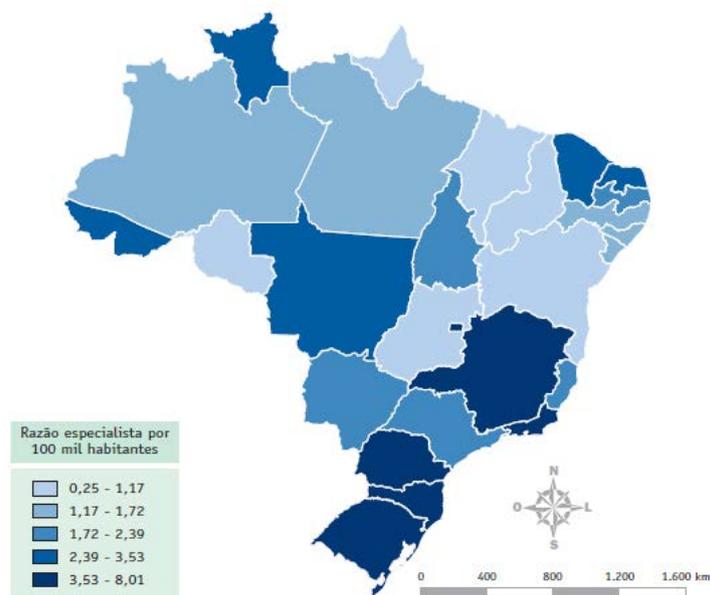
Source: OECD (2021^[2]) Health Statistics Database, <http://stats.oecd.org>; Brazilian Ministry of Health.

Regional differences in the distribution of all physicians is an important concern in Brazil. As in many OECD countries, the number of doctors per capita varies widely across regions. While overall there are 2.3 doctors per thousand population in Brazil, there are capitals with more than 12 doctors per 1 000 population (Vitória, in Espírito Santo for example), and regions with values below one doctor per 1 000 population (the Amazon Region in the North) (Scheffer et al., 2018^[1]). The differences between small and large municipalities in Brazil is comparable to other OECD countries.

The uneven distribution of doctors holds true when looking at some specialties, for example for the FCM specialist. Figure 5.2 indicates that some states in the North and Northeast regions have the fewest doctors per population, while the best-supplied region is the South and Southeast regions, followed by the Central-West (Scheffer et al., 2018^[1]).

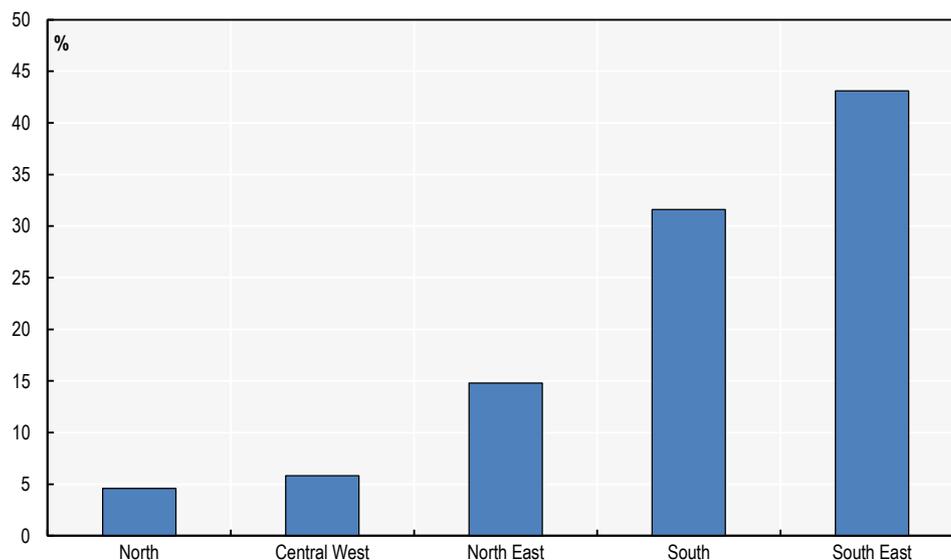
On a state level, the FCM specialist per 1 000 population ratio ranges from 0.4 in Maranhão in the Northeast region to 1.6 in Rio de Janeiro. Overall, the North region of Brazil gather only 4.6% of all FCM specialists, while the South and Southeast regions gather almost 75% of all FCM specialists (Figure 5.3).

Figure 5.2. Density of family and community medicine in Brazil per States, 2018



Source: Scheffer et al. (2018^[1]), Demographia Médica No Brasil 2018.

Figure 5.3. Distribution of family and community specialists per regions, 2018



Source: Scheffer et al. (2018^[1]), Demographia Médica No Brasil 2018.

Geographical imbalances across different regions in Brazil reflect the concentration of specialised services and physicians' preferences to practise in urban settings. As in many other OECD countries, Brazilian doctors might be reluctant to practise in rural regions or socio-economically challenged urban areas due to concerns about their professional life (including their income, working hours, opportunities for career development, isolation from peers) and social amenities (such as educational options for their children and professional opportunities for their spouse) (OECD, 2019^[3]).

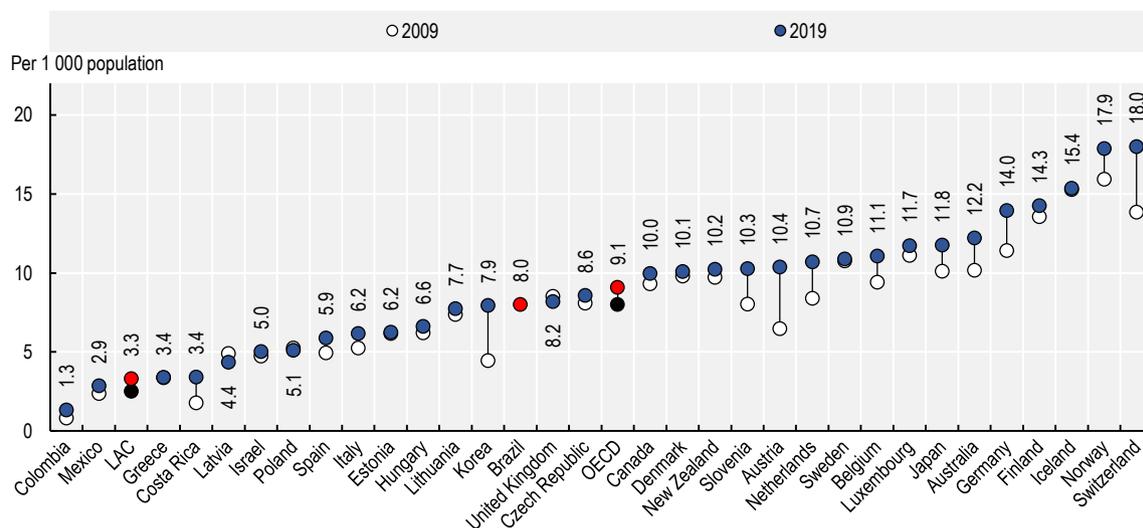
It is also important to note that geographical imbalances in medical doctor (and PHC physicians), is disproportionately experienced by people living in remote and rural areas who have the highest health care needs, and where social vulnerabilities are highest (Oliveira et al., 2017^[4]). This means that the PHC sector faces a double challenge of high health care demand and staff shortages, which can lead to inequitable access to care (Barbosa and Cookson, 2019^[5]). Shortages and geographical imbalances in workforce need to be addressed as a matter of priority as it can lead to lower health outcomes, lower health care quality and unmet needs for population living in underserved regions (see Chapter 2 and Chapter 4).

5.2.2. Brazil nursing workforce has significantly increased over the past decades

In 2019, Brazil had 414 712 nurses, and annually produced about 50 000 nurses in their undergraduate nursing programmes (Cassiani and Silva, 2019^[6]). In the Latin American region, Brazil is the only country that trained nurses in professional master's degree, which grew by 156% in the period 2011-20.

Brazil's nursing workforce has increased over the past decade to reach eight nurses per thousand population in 2019, moving closer to the OECD average of 9.1 (Figure 5.4). This is much higher than the LAC average of 3.3 nurses per 1 000 population. The increase in the volume of nurses is mainly explained by the implementation of new federal regulations, including the creation of specific PHC teams (Riverside team, Health Academy Programme, the Home care teams among other), requiring nurses.

Figure 5.4. Nurses per 1 000 population, 2009 and 2019 (or latest year available)



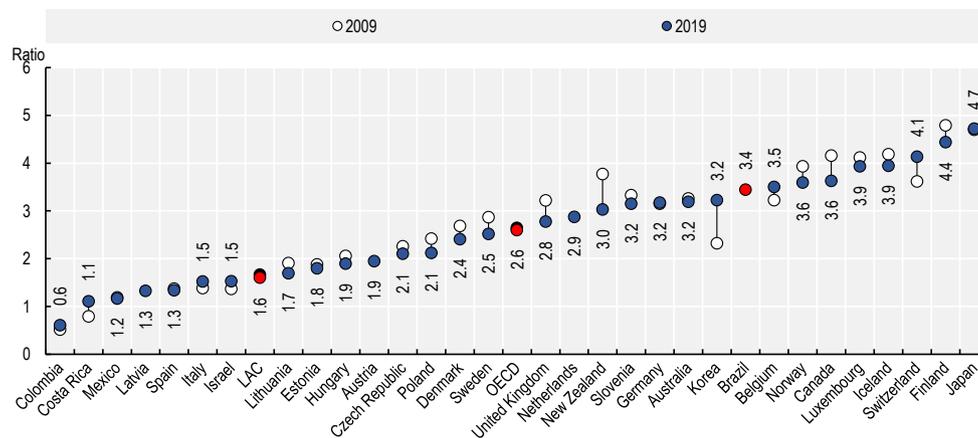
Source: OECD (2021^[2]) Health Statistics Database, <http://stats.oecd.org>; Brazilian Ministry of Health.

The skill-mix – the ratio of nurses to doctor – is relatively higher in Brazil (Figure 5.5) than the OECD and LAC average. Nurses outnumber doctors in Brazil at 3.4 nurses per medical doctor, compared to the OECD average of 2.6 and the LAC average of 1.6.

This is a welcome news to respond to the changing demand for health services. There is a need for a better health professional skill-mix in the context of rapidly ageing populations and rising burden of chronic conditions in Brazil (see Chapter 2). Currently, there is no discussion around the expansion of nursing role or implementing advanced functions for nurses, as it has been introduced with some success in other OECD countries such as Australia, Canada, the United States, the United Kingdom, some Nordic countries, and France more recently. In these countries, advanced practice nurses provide greater support in the care of chronically ill patients and those with complex morbidities, working in co-operation with PHC

doctors and specialists in teams and other health and long-term care settings. Improved interaction and communication between members of FHTs is critical for the success of task shifting and redistribution of roles.

Figure 5.5. Ratio of nurses to doctors, 2009 and 2019 (or latest year available)



Source: OECD (2021^[2]) Health Statistics Database, <http://stats.oecd.org>; Brazilian Ministry of Health.

5.2.3. Community health workers play a crucial role in PHC

Following the implementation of the Community Health Agents Program (PACS), CHWs started to play a crucial role in the Brazilian PHC system. CHW are frontline public health workers, often members of the communities in which they work and have therefore valuable knowledge of people needs and are trustful source of information (Grossman-Kahn et al., 2018^[7]; Wadge et al., 2016^[8]). While a range of different health professionals are involved in PHC delivery (physicians, nurses, nutritionists, pharmacists or social workers, etc.) (see Chapter 2), there are up to 12 CHWs involved in each FHT. In 2020, more than 250 000 CHWs served 61% of the population, up from 60 000 in 1998. The population covered by CHWs is the highest in the Northeast and North regions (with at least 74% of the population covered by CHWs) (Figure 5.6).

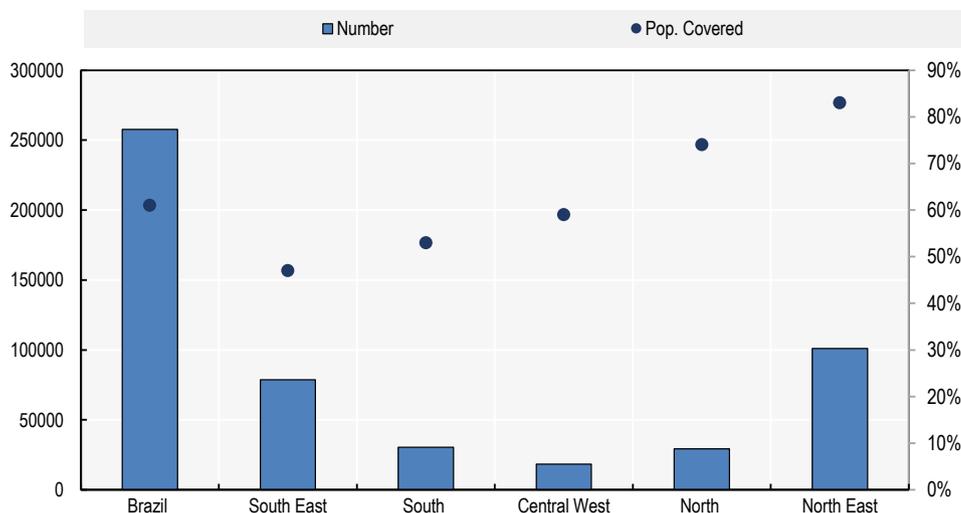
Unlike many OECD countries, in Brazil, CHWs provide a wide range of support for comprehensive PHC services including clinical triage, health promotion, social determinants and household data (Grossman-Kahn et al., 2018^[7]). They are expected to resolve many low-level problems such as medication review for patients chronically ill, while referring more complex issues to doctors and nurses of the FHT. CHWs complete between 10-15 home visits a day, and spend between 1-2 hours a day at the clinics doing paperwork, organising the waiting rooms, consultation appointments for other health professionals and offering educational sessions. They are responsible for registering the households in the areas where they work, and help families access other government services such as conditional cash transfers and social services. Within FHTs, each CHW is responsible for 150 families.

The minimum requirement to become a CHW is to get a secondary education, but more than 60% have a professional diploma. Turnover is low as it is a stable and respectful profession (Wadge et al., 2016^[8]).

Despite their importance for the provision of PHC services, studies have shown that CHWs do not have many technological supports to operate in the community. Evaluations show that CHWs are effective at improving specific health outcomes and access to health care (Grossman-Kahn et al., 2018^[7]), and that it can represent a cost-effective intervention to deliver essential health care services (Vaughan et al., 2015^[9]). Yet, available evidence also highlights that, in many remote and vulnerable municipalities, CHWs

are not equipped with mobile phones and tablet computers to enable remote diagnoses and real time communication with the PHC facilities (Wadge et al., 2016^[8]).

Figure 5.6. Number of community health workers by regions



Source: Ministério da Saúde (2020^[10]), Painéis de Indicadores : Agentes comunitários de saúde, <https://sisaps.saude.gov.br/painelsaps/acs>

Overall, the COVID-19 pandemic demonstrated the importance of having a skilled and sufficient health workforce to respond swiftly and effectively to the public health crisis. Health professionals (doctors, nurses and community health workers) are at the forefront of the crisis, and the pandemic has put huge pressure on them, affecting their physical and mental health. In Brazil, as well as in OECD countries, investments in human resources for health are critical (see Box 5.1).

Box 5.1. The COVID-19 pandemic demonstrated that investments in human resources for health are critical

Across OECD countries, the pandemic is making pre-existing shortages of doctors and nurses more visible and acute. Shortages of doctors and nurses result from a lack of investment in education and training programmes and in recruitment of new staff and retention of existing staff. These shortages, in turn, resulted in heavy workload and burnout among health workers.

As doctors, nurses and other health professionals mobilised on the frontline to respond to the COVID-19 pandemic, OECD health systems sought ways to increase the number of staff available during the peak of the pandemic and to make the most efficient use of their work. This included recalling inactive and retired health professionals, offering them some short training to update and upgrade their skills (Italy, Portugal, the United Kingdom for example). Other countries mobilised or established a “reserve list” of health workers to deal with the outbreak and reallocate staff across regions (France, Belgium, Ireland and Iceland). COVID-19 has also accelerated innovative roles of health professionals, removing pre-existing structural and institutional barriers and permitting a more efficient use of human capital in the health sector. In Canada, for example, pharmacists have been authorised to extend prescriptions beyond what they were previously allowed to do, and to prescribe certain medications.

Source: OECD/European Union (2020^[11]), *Health at a Glance: Europe 2020*, <https://doi.org/10.1787/82129230-en>.

5.2.4. Health workforce planning is at best very limited in Brazil

In Brazil, the federal agency called *Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira* (INEP) monitors workforce trends to support policy planning. INEP is also responsible for monitoring and assessing the basic and higher education system, and for promoting the dissemination of indicators and results of evaluation of the education system. The Secretaria de Gestão do Trabalho e da Educação na Saúde (SGTES) at the Ministry of Health is responsible for formulation of policies for health workforce management, training and qualification of health workforce, regulations of health professionals and regulation of the decentralisation process. It was created as the main federal instrument to mobilise and manage health care workforce. It defines the National Human Resources Health Policy for the good performance of SUS, in partnership with the Ministry of Education.

However, there is a lack of knowledge of present and future needs for doctors and other health care professionals in Brazil (Oliveira et al., 2017^[4]). Health care workforce planning is not based on an objective assessment based on the characteristics of the professionals (age, and sex), the work processes (productivity, workload), the characteristics of the health system in place (coverage and type of services offered), and population health needs (such as socio-economic and epidemiological profiles).

Rather, existing estimates are built on feasibility concerns, using data comparing ratio of doctors per thousand population between Brazil and other countries to determine a desirable ratio and create targets for improvement (Oliveira et al., 2017^[4]). A fixed minimum ratio target can be defined, but without considering the contextual factors described above to make a forecast of anticipated needs and demands, and a simulation of the necessary profiles and possible reform scenarios that would lead to a set of human resources better suited to meet the increasing demand for care.

Box 5.2. The workforce planning in Italy is based on a bottom-up approach

In Italy, there is a bottom-up approach for human resources planning in the Italian Servizio Sanitario Nazionale. Primary responsibility for health workforce planning is at the regional level, with information then fed back to the Ministry of Health, which brings together the data and forecasts from the regional levels, and analyses and validates the results to make appropriate recommendations to the Ministry of Education concerning entry to medical, nursing and other health-related education programmes.

The main objective of the health workforce planning in Italy is to ensure a suitable number of health care professionals in order to satisfy demand and to avoid workforce imbalances in the Servizio Sanitario Nazionale. The Ministry of Health and the regions then agree on the number of students to enter related education and training programmes.

Source: OECD (2014^[12]), *OECD Reviews of Health Care Quality: Italy 2014: Raising Standards*, <https://doi.org/10.1787/9789264225428-en>.

This is unlike many OECD countries such as Italy or the United States, which have strong bases for workforce planning. In the United States, the National Centre for Health Workforce Analysis offers health workforce research, data, tools and projections to inform programme planning and policy making (HRSA, 2021^[13]). In Italy, national needs in human resources are established based on regionally reported needs to establish the NHS human resources planning (Box 5.2). It is based on a bottom-up approach where information from the Regions is fed back to the Ministry of Health to make recommendations to the Ministry of Education (OECD, 2014^[14]). Experiences from OECD countries can be useful for Brazil in its efforts to define a clearer workforce management policy to govern health care human resources. Brazil already collects municipality-level data on a monthly basis, meaning that the pre-requisite data is already there to inform workforce management. A smarter use of those data is warranted to better understand workforce

challenges in Brazil, including for example the shortage and uneven geographic distribution of doctors. Greater co-ordination between municipalities and federal level could help in this direction.

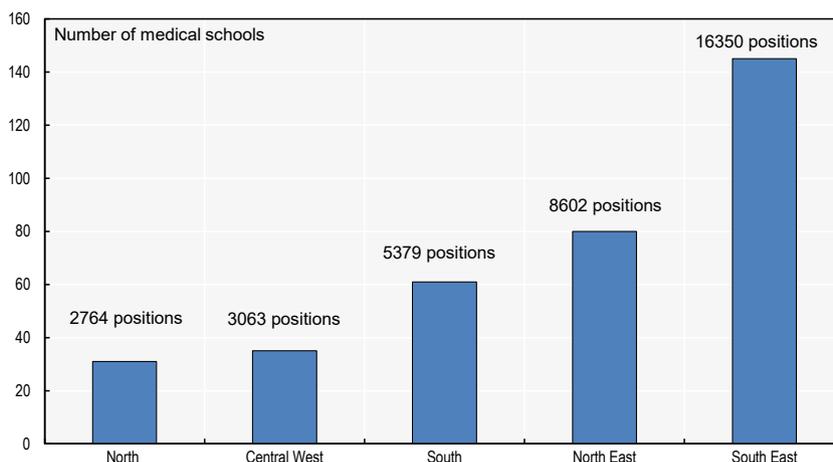
5.3. The organisation and quality of medical education in Brazil

Over the past decades, the number of medical schools has grown exponentially, driven mainly by the opening of private institutions. While some programmes have been set up to improve the medical curriculum toward PHC and achieve consistent quality across curriculums, gaps in medical education remain between medical schools and geographic disparities in access to medical training persist. The North and Northeast regions offer the lowest levels of per capita medical undergraduate positions in the country. Last but not least, the specialty of family and community medicine is undervalued in Brazil, and most doctors working in PHC in Brazil do not have a specialist qualification.

5.3.1. The number of private medical schools has grown exponentially in Brazil

In Brazil, the distribution of medical schools is uneven across the country. In 2020, the Southeast region had the highest distribution of medical schools among all regions (with 145 medical schools and 16 350 positions) (Figure 5.7). The same region concentrates around 45% of all positions in Brazil, with only one-fourth being offered in public institutions. At the other end of the scale, the North region concentrates 8% of all positions in Brazil.

Figure 5.7. Medical schools and positions by Regions, 2020



Source: Escolas Médicas do Brasil (2021_[15]), Escolas Médicas do Brasil, <https://www.escolasmedicas.com.br/index.php>.

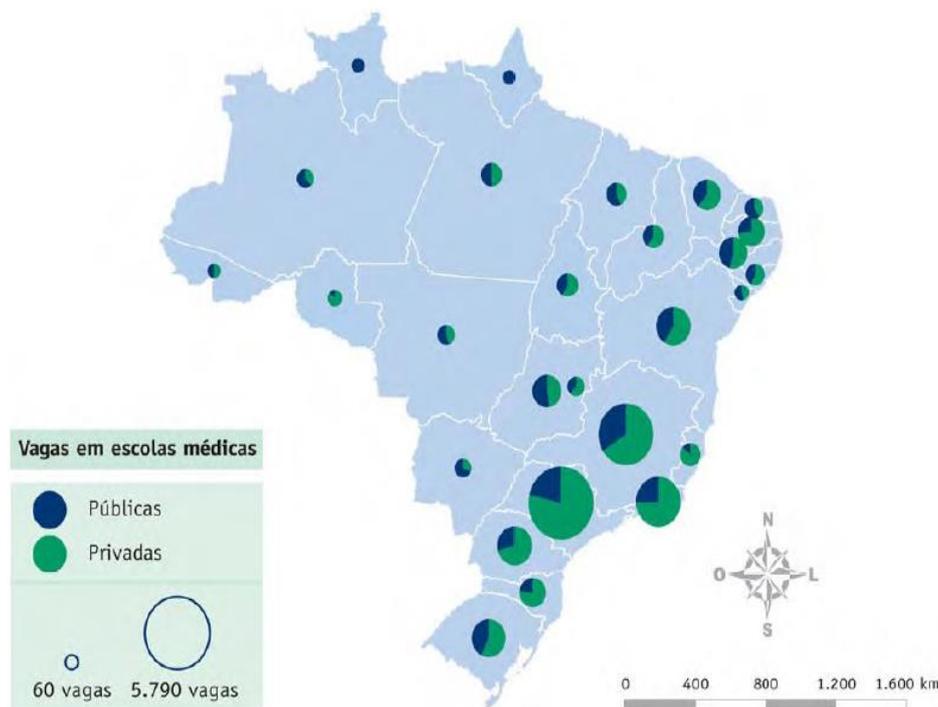
Unlike many OECD countries, medical education in Brazil has been marked by privatisation (Scheffer and Dal Poz, 2015_[16]; Scheffer et al., 2018_[11]). In addition to being larger in number, private medical schools also offer more places. In 2020, there were 352 medical schools, offering more than 35 000 training positions. Of these schools, 41% were public and 59% private (Escolas Médicas do Brasil, 2021_[15]). Public medical schools are free, while tuition at private medical schools varies from USD 700 to USD 2 500 (BRL 3 600 to BRL 13 000) per month (Escolas Médicas do Brasil, 2021_[15]). The country has around 14 places in medical schools per 100 000 population.

Throughout the country, public training positions represent 35% of the total training positions. In the South, 33% of training positions are public, in the Northeast 42% are public; in the North 48% are public, and in the Central-West 53% are public. Figure 5.8 presents the distribution of public and private medical schools

by States. In the State of São Paulo – which gathers 20% of training positions – only 21% are public. At the other end of the scale, the States of Roraima and Amapá only have public medical positions.

Private medical schools target niche markets, and generally offer education in more restricted and prestigious areas of knowledge (Scheffer and Dal Poz, 2015^[16]; Scheffer et al., 2018^[11]). Given that private medical schools charge high entry fees, the current admission system fosters inequality of access to medical school, favouring students from higher socio-economic background that do not specifically wish to work in PHC area and in rural areas.

Figure 5.8. Distribution of public and private medical schools in Brazil, 2018



Source: Scheffer et al. (2018^[11]), *Demographia Médica No Brasil 2018*.

5.3.2. Medical education in Brazil lasts six years

Undergraduate programme in Brazil is similar to many OECD countries. Physicians trained in Brazil follow an undergraduate programme lasting six year. The curriculum is divided into three cycles of two years (Conselho Federal de Medicina, 2020^[17]). During the first two years, the *ciclo básico* instruct basic scientific education with activities integrated to several medical specialties, allowing the practical application of such content. The next two years is called *ciclo clínico* with continued courses alongside clinical experience in medical setting (generally hospital setting). The last two year – *ciclo do internato*– focuses on clinical practice, through training in teaching hospitals and clinics. During the *ciclo do internato*, physicians actively participate to the medical practice under the direct supervision of medical schools. There are four six-month clinical rotations through internal medicine, surgery, paediatrics/obstetrics/gynaecology and public health, of which the latter includes exposure to PHC. In Brazil, graduate students are awarded the title of physician (Médico), allowing them to register with the Regional Council of Medicine (*Conselho Regional de Medicina*).

Unlike many other OECD countries (such as Canada, France or Italy), there is no national examination to be placed on a national register and be allowed to practise. Some states have made progress towards the

introduction of an Examination in Medicine, to be registered and allowed to practise. For example, the Regional Council of Medicine of São Paulo (*Conselho Regional de Medicina do Estado de São Paulo*) established that physicians who graduate from 2012 must pass a test to obtain professional registration.

Following the licensing, physicians can work as a “generalist” or choose among various professional paths depending on the postgraduate specialisation programme they attend. Specialisation can last two to five years, and take place in a medical school. There are two types of specialisation programme. First, direct access programme where any graduates can apply to examinations for these specialties regardless of training or prior experience. Second, prerequisite programme, where doctors should have already completed a specialty or achieved expertise.

As of February 2019, the Federal Council of Medicine, the Brazilian Medical Association and the National Commission of Medical Residency Brazil recognise 54 specialty programmes (Scheffer et al., 2018^[1]). In 2018, among the total number of medical doctors, 169 479 (37.5%) were generalists with no specialty training and 282 298 (62.5%) had a specialty training. Four specialty training concentrate 40% of all specialists in 2018 (Clínica Médica, Pediatria, Cirurgia Geral, and Ginecologia e Obstetria).

The specialty of FCM is not recognised as a knowledge area by the Federal Agency for Support and Evaluation of Graduate Education. However, the specialty of community general medicine was officially recognised in 1981 by the National Commission on Medical Residency (Giliate Cardoso Coelho, Valeska Holst and Aristides, 2019^[18]). The Brazilian Society of Family and Community Medicine (SBMGC) was also created at that time, followed by the creation of the Brazilian Society for Family Medicine (SOBRAMFA) (Box 5.3). Since 2001, the specialty is called Family and Community Medicine, with medical residencies lasting two years. In 2018, there were more than 100 FCM residency programmes in the country, with around 1 600 training positions each year (representing 4.4% of all training positions) (Scheffer et al., 2018^[1]). Although few in number, some post-graduate programmes in Family and Community Medicine are well known in Brazil such as the Conceicao Hospital Group (with 22 training positions each year), or the Municipal Health Department of Fortaleza in the State of Ceará (with more than 50 training positions each year) (Justino, Luzón Oliver and Palhano de Melo, 2016^[19]). Most medical residencies, master’s and PhD degrees in FCM are located in the Southeast and South Regions (Fontenelle et al., 2020^[20]).

While the number of specialists in FCM increased over time, recent evidence suggests that FCM is still the last option among physicians (Fontenelle et al., 2020^[20]). As earlier mentioned, in 2018, only 5 486 medical doctors had a specialty training in FCM, representing only 1.4% of all specialists in Brazil (Scheffer et al., 2018^[1]).

Most doctors working in PHC in Brazil do not have a specialist qualification. This is unlike many other OECD countries where medical doctors are required to have a specialty training to be allowed to practise as a PHC doctor. In Canada, for example, physicians must have additional specialist training in family medicine to work in PHC (Ponka et al., 2019^[23]). In the United Kingdom, participation in a three-year course is compulsory to practise family medicine. Turkey introduced specialised family medicine training as part of the *Health Transformation Programme* launched in 2005. The reforms sought to reinvigorate the speciality of family medicine, which was first defined in 1983 but failed to embed itself extensively in PHC provision. The reforms defined the Family Medicine core team as comprising a family physician, nurses and professional assistants, to whom a list of named patients was assigned. Family physicians across Turkey are required to deliver a defined set of services, to work to a standard set of norms and are paid according to national terms and conditions. Significant investment has been made to improve working conditions, with more generous salaries than before the reform. In 2018, Turkey’s PHC/generalist doctors now comprises 32% of all doctors, above the OECD average of 23% (OECD, 2019^[22]).

Box 5.3. The Brazilian Society of Family and Community Medicine (SBMGC) and the Brazilian Society for Family Medicine (SOBRAMFA)

Founded in 1981, the Brazilian Society of Family and Community Medicine aims to promote the principles and values of Family and Community Medicine as an academic discipline, as well as to promote patient-centred care in the clinical practice and the medical education.

The Brazilian Society of Family Medicine is organised around three priorities:

- Prepare future professionals based on patient-centred approach
- Integrate medical students to health services and connect them to the real needs of the population
- Train teachers, educators, and managers to promote academic incorporation of the specialty.

The Brazilian Society for Family Medicine (SOBRAMFA), founded in 1992, also organises several activities to spread the family medicine value among medical students at congresses, academic meetings, family medicine seminars and international meetings. It organises Mini-Fellowship in Family Medicine programme, where students experience family medicine practice by managing patients under the supervision of the SOBAMFA faculty and residents in a range of practice setting. For example, the SOBRAMFA develops guidelines, promote research and provide training and continuous medical education (such as the Miles Programme).

The internship for medical students in undergraduate programme, and the specialty programme focus on follow-up care for chronic patients, health prevention, treatment of multiple comorbidities. It also focuses on geriatric care (care for the elderly who live in communities), palliative care (learning how to care for patients without therapeutic possibility, discuss approach to death, deal with disabilities, and symptom treatment), understanding patient's pathway, learning team work and improving communication, and work in palliative care team.

Source: Janaudis et al. (2009^[24]) Academic Family Medicine in Brazil ; SBMFC (Janaudis et al., 2009^[24]; SBMFC, 2021^[25]).

In the area of nursing, Brazil has several degrees ranging from bachelor degree, master degree to doctoral professional degrees (Cassiani and Silva, 2019^[6]; Neto et al., 2018^[26]). It is reported that around 50 000 nurses are trained every year (Cassiani and Silva, 2019^[6]). An evaluation of nursing training found that the training had a hospital-centric model, with little interdisciplinary integration (Magnago et al., 2017^[27]). This is not appropriate to strengthen people-centred primary health care.

CHWs are most often selected by local health committees and have to be literate. The training of community health workers is conducted in regional health schools operated by the national Ministry of Health using curriculum approved by the Ministry of Education (CHW Central, 2018^[28]). The curriculum consists of 8 weeks of training from local nurses, followed by 4 weeks of supervised field training. These include training on home visits and on how to conduct a family census, but also on specific priority health care interventions. CHWs are not trained to address health needs, but rather they are trained to recognise health needs and encourage communities to seek care (CHW Central, 2018^[28]; Grossman-Kahn et al., 2018^[7]). CHWs also receive monthly and quarterly ongoing training.

5.3.3. National evaluation tools and voluntary accreditation facilitate evaluations of the quality of medical education in Brazil

Each medical school in Brazil decides its own curriculum and educational objectives, and implements its own summative and formative assessments of students based on skills, abilities, and curriculum content.

To promote changes in the medical curriculum toward PHC, the Ministry of Education has introduced the Program for the Encouragement of Curricular Changes in Medical Courses (Promed), the National Program for the Reorientation of Health Professional Education (Pró-Saúde), and the National Guidelines for the Curriculum of Health Professional Education. The National Curricular Guidelines of Medical Courses introduced in 2001, then updated in 2014 to support the More Doctor Programme, intends to ensure homogeneity between medical schools across the country (Ferreira et al., 2019^[29]).

The curriculum's competencies target three axes: health care, health management and health education, with a focus on collective health and comprehensive care. The updated guidelines aim at moving away from hospital practice, increasing the inclusion of theoretical and practical activities related to collective health and PHC, and improving uptake of activities related to social determinants of health. The overarching objectives encompass (1) promoting patient-centred care, (2) reliance on inter-professional teamwork, and (3) developing shared individual therapeutic plan with the patient (Ferreira et al., 2019^[29]). With these programmes, undergraduate students are supposed to be exposed to a more community-based curriculum, although it is difficult to appreciate the impact of these initiatives on the skills of the students (Scheffer and Dal Poz, 2015^[16]).

National tools have also been set-up to evaluate medical schools as a result of the sharp increase in medical schools from 1990. The National System for the Evaluation of Higher Education (SINAES, *Sistema Nacional de Avaliação do Ensino Superior*) is responsible for evaluation system to renew, supervise, accredit and reaccredit medical schools (INEP, 2015^[30]). The evaluation system consists of three main components:

- Institutional evaluation: performed by self-evaluation and external evaluation by institutional evaluators accredited by the INEP;
- Evaluation of the course and curriculum by teachers, co-ordinators, students, and external evaluators;
- Evaluation of the students entering and finishing the course: through the National Exam of Student Performance (ENADE, Exame Nacional de Desempenho dos Estudantes), which is performed by each schools (Ministerio da Educação, 2021^[31]). ENADE covers seven areas of knowledge including general medicine, paediatrics, gynaecology and obstetrics surgery, public health, medical ethics and basic sciences. The test results are used to identify areas of good performance and weaknesses in all medical schools. The ENADE gives an indication of the development of competences and skills foreseen in the National Curricular Guidelines of Medical Courses.

The Sistema de Acreditação de Escolas Médicas (Accreditation System of Medical Schools, SAEM) has also been developed by the Conselho Federal de Medicina (CFM, Brazilian Federal Council of Medicine) in 2016 to reaffirm its commitment toward high quality standards for medical education (SAEME, 2021^[32]). The accreditation is voluntary and complements the government evaluation procedure. The SAEM is based on the WHO and the WFME Guideline for Accreditation of Basic Medical Education. The accreditation process consists of the completion of online questionnaire covering five standards (Educational Management, Educational Programme, Academic Staff/Faculty, Students, and Educational Resources), data analysis by an evaluation committee; and a visit to the medical school by a team composed of four evaluators, one of them being a student. After this process, the evaluation committee issues a report to the educational institution with the result, which can be classified into three categories: Accredited, Accredited with recommendations of improvement, and Non-Accredited.

National tools and voluntary accreditation allowing to evaluate the quality of medical education is paramount to ensure consistency in the skills and competences of medical doctors across the country, but also to make sure the supply of medical schools and their postgraduate activities reflect the evolving Brazilian health needs. However, the CFM recently noted that, in spite of government initiatives, there are still inadequate academic programmes, inadequate internship offers and that gaps in medical education remain between medical schools (AML, 2019^[33]). In addition, comparing the performance of public and

private medical schools, evidence suggests that public medical schools consistently performed better than the private undergraduate medical courses about the ENADE (Scheffer and Dal Poz, 2015^[16]). Reinforcing mechanisms to ensure high quality of medical education is thus warranted in Brazil.

5.4. Improving the distribution and supply of PHC doctors in Brazil

To address the shortage of PHC doctors and the uneven geographic distribution of doctors, Brazil implemented several federal programmes including the More Doctors Programme. These efforts contributed to improvements in access to and quality of medical training in Brazil, but geographic disparities in access to medical training persist and unfilled PHC positions remains the norm.

There are three main policy levers to help address the shortages of medical doctors and improving its distribution:

- Training more rural doctors;
- Providing financial and non-financial incentives, while implementing regulations to restrict the freedom of medical doctors (the “stick and carrot approach”);
- Promoting innovations in health service delivery, through task-shifting and the use of telemedicine.

They are not mutually exclusive, and may not offer the panacea when implemented in isolation. Previous studies show that these policy levers may have a greater impact if they are used in combination (OECD, 2016^[34]).

5.4.1. Large-scale PHC programmes to address maldistribution of PHC physicians

The More Doctors Programme partly addressed the imbalances in the distribution of health workers

Established in 2013, the More Doctors Programme (MDP) is a large-scale health system intervention that aims to strengthen the provision of PHC services in underserved communities, within the framework of the Family Health Strategy (see Chapter 2). The MDP was designed by the Ministry of Health as a supply side intervention with three prongs that complement each other, with a particular emphasis on strengthening PHC provision in underserved communities:

- Transfer of funds to municipalities to strengthen PHC infrastructure;
- Improving access to and quality of medical school training; and
- Recruitment of Brazilian and foreign physicians to work within FHTs.

At the outset, the first two components were envisioned as long-term investments in the overall organisation of the Family Health Strategy. Broadly, the first component aimed at improving the availability and quality of work environments in which the FHT provide care (Santos et al., 2017^[35]). The second component focused on enhancing access to and quality of medical training, particularly in communities that have been lagging in attracting and retaining health workers (Figueiredo et al., 2021^[36]). In comparison, the third component was initially envisaged as an emergency provision to fill the immediate gaps in PHC physician availability through a large-scale physician recruitment initiative, particularly targeted at municipalities that had difficulty recruiting and retaining doctors (Santos et al., 2017^[35]).

The MDP came on the heels of previous nationwide initiatives that attempted to address the imbalances in the distribution of health workers. Prior to the MDP, Brazil introduced several programmes to improve access to medical training in underserved communities, including the 2001 Programme of the Interiorisation for Health Work (*Programa de Interiorização do Trabalho em Saúde*) and the 2011 Programme for Valuing PHC Professionals (*Programa de Valorização dos Profissionais da Atenção –*

PROVAB) (Figueiredo et al., 2021^[36]). While these initiatives did not eliminate the underlying drivers of the geographic imbalances in distribution of health workers, they provided valuable experiences and the know-how that informed the design and implementation of the MDP.

The new stream of funding led to a laudable expansion of the Family Health Strategy infrastructure

The first component involved creating a new stream of funding to strengthen the Family Health Strategy physical infrastructure. Municipalities could use the allocated MDP funding to increase the availability and the quality of the existing Family Health Strategy infrastructure on the ground. To receive funding, each municipality was required to submit an application to the MOH for review. Upon approval of their application, municipalities could choose to either refurbish the existing PHC clinics and purchase basic equipment (e.g. autoclaves) or build new facilities (Santos et al., 2017^[35]).

Relatively little evidence exists on the impact of this component on the provision of PHC services. Though limited, evidence suggests that the MDP successfully channelled additional resources for strengthening the PHC infrastructure, with the MDP resources leading to the construction of 3 496 new basic health units and refurbishment of 3 417 units by 2015 (Santos et al., 2017^[35]). According to Biernath (2020), more than 26 000 PHC facilities were built or renovated throughout Brazil following the implementation of the MDP (Biernath, 2020^[37]). The administration of this component was recently halted following a federal funding freeze (Hone et al., 2020^[38]).

The MDP contributed to improvements in access to and quality of medical training in Brazil, but geographic disparities persist

Despite previous attempts to improve equitable access to medical training, the geographic distribution of medical schools prior to the MDP were marked by notable disparities. For instance, in 2013, nearly 41% of all medical schools were located in the Southeast Region, compared to only 8.2% in the North and 9.3% in the Central-West regions (Santos et al., 2017^[35]). Compounding this challenge, the undergraduate medical curriculum did not adequately emphasise the diverse health needs of the Brazilian population (e.g. population groups residing in rural and remote areas) and PHC competencies in line with the priorities of the SUS (Carvalho, Marques and Silva, 2016^[39]).

In recognition, the second component consisted of a set of initiatives that aim to enhance access to and quality of medical education, with an explicit emphasis on alleviating geographic disparities in medical training. The MDP introduced multiple changes in medical education at the same time. First, the education component of the MDP involved the development of new frameworks to regulate the location of new public and private medical schools. Next, the MDP aimed at expanding the number of positions in medical undergraduate institutions by adding nearly 11 500 new positions by 2017 (Santos et al., 2017^[35]). Finally, the Programme led to the updating of the national undergraduate curriculum for medical training with more emphasis on PHC provision in line with the SUS priorities.

Early evidence suggests that the MDP may have contributed to improvements in access to medical training. Evaluating the impact of MDP on medical education in Brazil is complicated by the length of time required before the potential impacts on health system performance can become discernible. Yet, data obtained from the Higher Education Census suggests that the MDP achieved its medium-term objective of expanding the number of new positions by 2017. Mirroring this, an estimated 92% of the new medical undergraduate vacancies created from 2010-18 took place after the MDP was launched in 2013 (Figueiredo et al., 2021^[36]).

Despite these improvements, geographic disparities in access to medical training persists. Today, the North and Northeast regions continue to offer the lowest levels of per capita medical undergraduate vacancies in the country (Figueiredo et al., 2021^[36]).

The recruitment of PHC physicians contributed to enhancing health system performance, but challenges in the implementation of MDP diluted beneficial impacts

The third component involves the roll out of one of the world's largest PHC physician recruitment programme. At its height, the MDP recruited more than 16 000 physicians both from within Brazil and abroad to work exclusively within the FHT. The majority of the MDP physicians were recruits from across 85 countries, mostly from Cuba (Santos et al., 2017^[35]). All MDP recruits were selected from physicians who had prior experience in practicing family medicine, but without recertification requirement.

All Brazilian municipalities are eligible to request physicians from the MDP. To receive MDP physicians, municipalities are required to submit an online application to the Ministry of Health for review and approval. The Ministry of Health has the discretion to decide on the number of MDP physicians that will be deployed in the applying municipality. To inform the decisions over MDP physician allocations, the Ministry of Health developed a set of criteria aiming to identify underserved communities across Brazil in congruence with the aims and objectives of the Programme (Box 5.4).

Provider contracting arrangements for MDP physicians differ from contracts typically used by municipalities to hire non-MDP physicians. In general, the FHP physicians are hired directly by municipal governments, with little standardisation of contractual terms across physicians or municipalities. In comparison, the MDP physicians are hired directly by the Ministry of Health through contracts that can be renewed in every three years. Municipal governments are responsible for covering costs associated with transportation, lodging and food. This contracting structure was embedded in the MDP to reduce potential financial barriers that may disincentivise municipalities from joining the Programme. Importantly, municipalities are not allowed to substitute Brazilian physicians that are already practicing within the FHT in their communities with MDP physicians. However, no mechanism has been put in place to monitor any potential physician substitution.

It is not mandatory for the MDP physicians to take the national competency exam that is required for other physicians to practise medicine in Brazil. Instead, the MDP physicians are required to complete a mandatory three-week training course provided by the Brazilian health authorities before they could be deployed in municipalities. In addition, all MDP physicians are required to attend brief training sessions organised by Brazilian authorities in regular intervals. Online-learning courses are also available to the MDP physicians. Once deployed in municipalities, the MDP physicians are assigned to advisors, who are selected from experienced Brazilian health care professionals.

To date, the MDP has been associated with improvements in physician availability, though there is evidence of substitution of Brazilian physicians with the MDP recruits. Hone and colleagues (2020) suggested that the MDP was associated with a 12.2% increase in the number of PHC physicians by its fifth year of implementation, with more pronounced effects among municipalities that had lower levels of physician availability at the start of the Programme (Hone et al., 2020^[38]). Despite this, evidence suggests that the MDP also had unintended consequences for human resources for health, with the MDP leading to the substitution of Brazilian physicians who were already working in communities. In their analysis, Hone and colleagues quantified that, in the absence of any substitution of Brazilian physicians with MDP recruits, the MDP could have led to a 30% increase in PHC physician availability, more than double that of the current improvements in physician availability (Hone et al., 2020^[38]). This is despite the design feature of the MDP that explicitly prohibited any replacement of Brazilian physicians with MDP physicians.

The impact of MDP on adult and child mortality remains mixed. Hone and colleagues found that the MDP was associated with a modest 1.4% reduction in adult mortality amenable to health care services (Hone et al., 2020^[38]). Earlier studies suggested that the MDP fell short of reducing maternal and child mortality (Carrillo and Feres, 2019^[45]; Mattos and Mazetto, 2019^[46]), despite an attributable rise in the number of FHT consultations attended by physicians (Mattos and Mazetto, 2019^[46]). One potential explanation relates to the significant bottlenecks in access to the secondary and tertiary care, suggesting that further progress in maternal and child health may require further improvements in co-ordination of care between different

levels of care (the Brazilian Network for the Surveillance of Severe Maternal Morbidity study group, 2014^[47]).

Box 5.4. Defining underserved municipalities within the framework of MDP

The MOH ranks municipalities based on a set of explicitly defined criteria to inform the distribution of MDP physicians (Hone et al., 2020^[38]). Criteria used for the MDP are similar to those used in PROVAB, with the two initiatives sharing similar, readily available data sources at the community level (e.g. municipality-level or census tracks within municipalities). In the first five years of the MDP, the Ministry of Health revised the prioritisation criteria twice, but in each iteration, the selected criteria aimed at capturing the socio-economic, health systems and geographic determinants that may reveal the local needs in each community. These indicators included: the proportion of population living in extreme poverty, population size, PHC infrastructure and health worker supply, as well as geographic location (Özçelik et al., 2021^[40]).

A substantial fraction of Brazilian municipalities enrolled in the MDP in a relatively short time span, though the rollout of the Programme has not been without challenges. The share of municipalities that received at least one MDP physician expanded from about 20% in 2013 to 69% in 2017 (Özçelik et al., 2021^[40]). Over time, participation improved among municipalities that were considered priority for the purposes of the MDP. By 2017, about 76% of priority municipalities had at least one MDP physician. Priority municipalities that did not enrol in the MDP had smaller population density and higher rates of extreme poverty compared to priority municipalities that participated in the MDP. Importantly, this finding is in congruence with earlier evidence suggesting that less densely populated communities with higher levels of poverty also lagged in the expansion of the Family Health Strategy prior to the MDP (Andrade et al., 2018^[41]).

It might be warranted to improve the community targeting methods used by the MDP to maximise the potential benefits of the Programme. As experienced by other OECD countries (the United States, Australia, and Canada), the community targeting method has large implications for human resource planning, and this might not be enough recognised in Brazil. In Australia, for example, communities with a shortage of medical practitioners are designated as the *Distribution Priority Areas* on the basis of their demographic and socio-economic status, population size and measures of geographic remoteness. Foreign-trained general practitioners are required to work at least 10 years in communities with DPA designation. In Canada, criteria used to define underserved communities consider physician to population ratios, demographic and socio-economic status and geographic accessibility. In The United States, the Health Professional Shortage Area designation is determined based on a composite score derived as a combination of health care service provider density, level of poverty, infant mortality rate and the age structure of each community.

Source: Özçelik et al. (2021^[40]), Assessing the performance of beneficiary targeting in Brazil's More Doctors Programme, <https://doi.org/10.1093/heapol/czaa137>; Andrade et al. (2018^[41]), Transition to universal primary health care coverage in Brazil, <https://doi.org/10.1371/journal.pone.0201723>; Hone et al. (2020^[38]), Impact of the Programa Mais médicos (more doctors Programme) on primary care doctor supply and amenable mortality: quasi-experimental study of 5 565 Brazilian municipalities, <https://doi.org/10.1186/s12913-020-05716-2>. And information taken from Canada (Ministry of Health, 2018^[42]), Australia (Australian Government, 2021^[43]), and the United States (HRSA, 2021^[44]).

Most evidence suggests that the MDP led to improvements in access to care. One study that evaluated the impact of the MDP in its first two years found that the Programme was associated with increases in appointments, consultations, medical referrals and home visits by 5.9%, 9.4%, 12.3%, and 29.7%, respectively (Mattos and Mazetto, 2019^[46]). This study also found that the MDP led to a 4.6% reduction in

general hospitalisations. Similarly, the MDP has been shown to improve patient satisfaction (Comes et al., 2016^[48]).

The MDP has also been linked with improvements in the quality of care, as measured by reductions in hospitalisations considered to be preventable by timely and adequate access to health care services. Earlier assessments concluded that the MDP resulted in a decrease of about 23 000 hospitalisations due to preventable causes in its first three years, corresponding to about USD 6 185 019.85 in savings from treatment costs (Fontes, Conceição and Jacinto, 2018^[49]). The beneficial impacts of the MDP have been shown to accumulate and grow over time. Evidence also shows that the MDP led to reductions in adult hospitalisations primarily due to infectious gastroenteritis, bacterial pneumonias, asthma, kidney and urinary infections, and pelvic inflammatory disease (Maffioli et al., 2019^[50]), though it fell short of reducing hospitalisations due other preventable conditions like hypertension (Özçelik et al., 2020^[51]).

Evidence on the contributions of MDP for narrowing geographic disparities in population health remains mixed, suggesting that further improvements in community targeting methods may be needed to reap the potential benefits. Hone and colleagues (2020) concluded that the MDP fell short of yielding greater health gains in priority municipalities (Hone et al., 2020^[38]). In concordance, another recent study also showed that there has been no discernible differences in hospitalisations due to hypertension between urban and rural municipalities as defined by the Programme (Özçelik et al., 2020^[51]). This study also showed that the MDP was linked with reductions in hospitalisations due to cerebrovascular diseases only in urban municipalities. Both studies suggested that further improvements in the community targeting methods used by the MDP may be considered to maximise the potential benefits of the Program.

The new programme Médicos pelo Brasil will gradually replace the MDP

A new programme called Doctors for Brazil (*Médicos pelo Brasil*, law No. 13.958 of 18 December 2019) was initiated by the new federal government administration. Its purpose is to increase the provision of medical services in places of difficult delivery or of high vulnerability, along with promoting the training of doctors specialising in family and community medicine.

The *Médicos pelo Brasil* programme is expected to gradually replace the *Mais Médicos* programme, in particular by hiring Brazilian trained doctors who have already shown to be scarce or not wanting to go to isolated or underserved areas.

Médicos pelo Brasil and *Mais Médicos* will operate in parallel to guarantee continuity in the supply of health care services. This type of changes represent a governance challenge for the Brazilian health system, which should develop a strategic vision to preserve and amend policies or programmes that have shown to improve outcomes. The MDP should inform the design and implementation of the *Médicos pelo Brasil* programme.

Based on prioritisation criteria, the new programme will expand the number of PHC doctors to 7 500 in the poorest areas of the country, with 60% of the professionals to be hired in the North and Northeast regions. In total, 4 823 municipalities are expected to be part of the programme. To maximise the potential benefits of the new programme, it will be critical to make the prioritisation criteria clear and transparent.

Médicos pelo Brasil has a stronger focus on quality than the MDP, and positive steps have been taken so far:

- Medical licenses have to be recognised for all medical doctors who apply to the programme, either through the registration process for Brazilian students or the revalidation process for foreign-trained medical doctors. The recognition process is the responsibility of the Medical Council and Regional Councils of Medicine.
- The *Médicos pelo Brasil* programme offers two-year specialty training in Family and Community Medicine so that all contracted doctors become specialists in PHC. At the end of the training,

specialists in PHC will have to present a “*Trabalho de Conclusão de Curso*”, an analysis of the local health needs of the catchment area where medical doctors work so that improvement and evaluation strategies are being implemented.

- PHC doctors are expected to remain in the Family Health Units where they did the specialty training, and receive a 2-year training grant, which varies according to the municipalities’ level of vulnerability. The grant is BRL 12 000 net monthly, and an additional BRL 3 000 bonus for remote locations (those classified as rural and intermediate) or an additional BRL 6 000 for indigenous districts, as well as riverside and river locations. Once qualify as specialist in Family and Community Medicine, they are hired under the Consolidation of Labor Law (CLT) which supposes better working conditions and security at work compared to the *Mais Médicos* programme.

With regards to the tutorial programme, only specialists in family and community medicine or in internal medicine can be selected. Tutors are also hired under the CLT. They will be responsible for serving the population registered to the FHT, and for supervision of other medical doctors who are enrolled in the specialisation training. There are four salary scales, with progression every three years: The first salary level can reach up to BRL 21 000 and, gradually, up to BRL 31 000, considering performance bonus and additional grants depending on the level of vulnerability.

All these changes are promising, representing improvements compared to the Mais Medicos Programme and real opportunities to increase the attractiveness of the PHC specialty (Table 5.1). Strategic thinking toward the community targeting methods is required to make sure that eligible municipalities are effectively enrolled to the new programme.

Table 5.1. Médicos pelo Brasil programme has a greater focus on quality

Mais Medico	<i>Médicos pelo Brasil</i>
Scholarship without employment link and for a determined time	Contracting by the CLT with the right to FGTS holidays
Does not require any Brazilian diploma or revalidation	Requirement to have a recognised Brazilian licence or to undertake revalidation of foreign diploma
No requirement to have a formal specialisation degree in PHC	Requirement to pass the speciality training in Family and Community Medicine.
Foreign Medical doctors are not allowed to bring the family to live in Brazil	Foreign Medical doctors are allowed to bring the family to live in Brazil

Source: Brazilian Ministry of Health.

The next two sections present policy responses that could help tackle the uneven distribution of PHC physicians in Brazil.

5.4.2. Changing regulations can help address shortages of medical doctors in some remote areas

Training more rural doctors to boost their numbers

As the MDP, the new *Médicos pelo Brasil* programme sets very promising objectives to improve the supply and the distribution of PHC doctor across the country. As part of the new programme, it will be important to train rural PHC doctors to improve retention over the longer term. International evidence confirm that medical education in rural location led to increases in the number of medical graduates that will work in rural place over the long term (McGirr, Barnard and Cheek, 2019^[52]). In congruence, experiences from OECD countries also highlight the importance of having medical studies for PHC professionals be located in local regions such that students are close to their residencies and are incentivised to stay upon successfully completing their training (OECD, 2016^[34]).

Box 5.5. The Rural Clinical School Programme in Australia

The Rural Clinical Schools (RCS) Programme was launched in 2000 to enable medical students to undertake the majority of their clinical training in regional areas.

The RCS aim to deliver significant components of the medical curriculum in a rural environment, with students undertaking a year or more of their medical training in a rural location. It entails the following targets (McGirr, Barnard and Cheek, 2019^[52]):

- 25% of all medical students to have at least one year of rural clinical training by graduation
- 25% of government-supported medical students to be recruited from a rural background
- All government-supported medical students to have at least 4 weeks of rural placement.

The programme is structured around four broad objectives (Australian Department of Health, 2008^[53]):

- Encourage medical students (and medical professionals) to take up a career in rural practice
- Encourage rural health professionals to take up academic positions
- Improve the range of rural health care services in rural communities across Australia
- Strengthen the health workforce in rural communities across Australia.

As of 2018, there were currently 18 RCSs in Australia (McGirr, Barnard and Cheek, 2019^[52]). The Rural Clinical Schools Programme has allowed to develop teaching and learning facilities, and student accommodation in dozens of rural and regional locations across Australia. There are positive evidence showing that RCS programme improve retention and recruitment, but also improving the range of quality of health care services in rural area. With this regards, particular specialties that were not available in the community have become available because of a successful appointment by the programme.

Source: McGirr, Barnard and Cheek (2019^[52]), The Australian Rural Clinical School (RCS) programme supports rural medical workforce, <https://doi.org/10.22605/RRH4971>; Australian Department of Health (Australian Department of Health, 2008^[53]), Rural Clinical Schools Programme.

Prior experiences from OECD countries, such as Australia, Canada, England or Norway, offer many opportunities for Brazil. For instance, in Australia, the Rural Clinical School (RCS) Programme was launched in 2000 to enable students to undertaken their training in rural areas. The RCS Programme supports 18 rural clinical schools, where it is required that 25% of students enrolled in the medical course have a rural background (McGirr, Barnard and Cheek, 2019^[52]). Recent evaluations showed that the RCS Programme was effective in increasing both the recruitment and retention of medical practitioners in rural areas over the long term (McGirr, Barnard and Cheek, 2019^[52]). Results show that students who have participated in RCS Programme were 1.5 times as likely to continue practicing medicine in regional and rural locations five years after graduating from medical school (Box 5.5). Other OECD countries established medical programmes in rural localities, such as Canada with the Northern Ontario School of Medicine, England with the Exeter and Plymouth medical school, or Norway with the Tromsø's medical school.

Implementing a “stick and carrot” approach

It is important to implement a “stick and carrot” approach to attract and retain PHC doctors in rural areas. This approach consists of combining financial and non-financial incentives for medical doctors with regulations which restrict the freedom of doctors.

Offering financial incentives to compensate for some of the disadvantages in less attractive regions is an important policy option already implemented in many other OECD countries such as in Chile, Germany, Canada or France. Such financial incentives compensate for longer working hours, a less advantageous “business environment” for doctors in underserved areas. They can be either one-off or wage-related financial incentives that are directly directed to the PHC doctors:

- First, there are **non-wage related payments**, which are used to encourage physicians to move to or stay in underserved areas. It is a one-off payment to help facilitate a location choice, and which can be linked with a return of service obligation. Such policies exist in some Canadian provinces. In Ontario, the Northern and Rural Recruitment and Retention Initiative offers grants of between CAD 80 000 and CAD 117 600 for a practice opening in a rural area paid over a four-year period (Ontario Ministry of Health, 2021^[54]). The applicant must commit to establish a full-time practice in a community in Northern and very rural areas, and in which they have never previously practiced full-time. The higher the rural index (the more Northern and rural the area), the higher the value of available grant. To encourage both recruitment and retention, the proportion of the grant paid out will be highest in year 1 and year 4. The payment schedule is as follows: Year 1: 40%, Year 2: 15%, Year 3: 15%, Year 4:30%. The province of New Brunswick also offers recruitment incentives to Medical Residents and newly recruited family physicians looking to establish a full-time community-based practice in designated fields. Family Medicine New Brunswick is a new programme that aims to improve patient access, increase collaboration between physicians using technology, and create a better work-life balance for physicians. For the first year, a new physician joining the programme will receive a guaranteed minimum remuneration of CAD 175 000 (New Brunswick Canada, 2021^[55]). Similar policies exist in Germany, where states (Länder) offer financial incentives for GPs opening their practice for the first time. In some states, the one-time payment comes with a return-of-service obligation of five to ten years (OECD, 2016^[34]).
- Second, there are **wage-related financial incentives**, where physicians in underserved areas receive financial incentives linked to income. These payments aim to compensate rural GPs for a smaller number of patients, longer working hours or challenging working conditions. In the Canadian province of Ontario, the Northern Physician Retention Initiative enables eligible physicians (general practitioners and specialists) in Northern Ontario to receive the equivalent of CAD 7 267.46 retention incentive paid at the end of each fiscal year in which they continue to practise full-time in Northern Ontario (Ontario Ministry of Health, 2021^[56]). In France, the Contrat d’Aide à l’Installation des Médecins offers a one-off payment of between EUR 50 000 and 31 250 to help physicians set-up a practice in an underserved region. The payment schedule is 50% upon signature of the CAIM, and 50% one year later (Assurance Maladie, 2020^[57]).
- Third, countries can **combine financial and non-financial incentives** to attract and retain physicians in underserved communities. For instance, Chile provides a promising example, where several incentives are combined to attract physicians to work in rural PHC hospital and health centres for a minimum of three years to a maximum of six years (Pena et al., 2010^[58]). The programme, called the Chilean Rural Practitioner Programme, entails 1) monetary compensation (direct and indirect financial incentives such as additional compensation depending on the level of isolation, performance bonus, installation and transport costs), 2) education incentives (four week clerkship with physicians, 3) management, environment and social support interventions (paid continuous medical education, additional days for personal reason, and additional week off) and 4) external incentives (better equipment, better connectivity, and internet and mobile phone access) (Pena et al., 2010^[58]). The programme has been found successful: the number of applicants exceeded the number of available positions, high retention rates, and high satisfaction rates from applicants (Pena et al., 2010^[58]). While dropouts from the programme are exceptional, around 60% of participants stay for the maximum period (six years).

As part of the *Médicos pelo Brasil* programme, physicians in underserved areas will receive financial incentives of BRL 3 000 when working in “rural and intermediate” areas, and of BRL 6 000 when working in indigenous districts, as well as riverside and river locations. As done in other OECD countries, it could be important to link financial incentives with a return of service obligation of between two and four years. Combining financial and non-financial incentives, and implementing some regulations to restrict the freedom of doctors, as experienced by OECD countries, could also be a good solution to recruit and retain doctors in underserved areas. The federal government will need to ensure that the various types of financial incentives are received by the medical doctors, and not distributed at the discretion of the municipalities.

Restricting the choice of location

A more stringent regulatory measure to redress the geographical imbalance of doctors would be to restrict the choice of practice location for PHC doctors. Brazil could, for example, learn from Turkey, Germany, Norway or some provinces in Canada (New Brunswick, Quebec) where interventions to restrict the choice of location of newly medical doctors have been established. At any rate, such regulatory approach requires careful and coherent workforce planning.

In Germany, self-employed doctors are not allowed to set up their practice and serve public patients in a catchment area that is considered ‘overserved’ based on a patient-to-doctor ratio. Physicians need to obtain a practice permit to be reimbursed by the statutory health insurance (KBV, 2021^[59]). The number of these permits is controlled by the National Association of Statutory Health Insurance Physicians through its 17 state associations. It is mandated by the government to guarantee medical service coverage of the population based on a quota agreed within the self-administration of the German health care system. The service coverage is measured based on the ratio between physicians and inhabitants in each of the 395 planning regions. For GPs, 100% coverage is achieved when the ratio of GP to inhabitant reaches 1:1 617. If the coverage of a region exceed 110%, no further permits are issued (OECD, 2016^[34]). In Canada, in the province of Alberta, the Bill 21 proposed that after April 2022 new doctors in the province will be required to obtain practice permits from the government upon completion of residency training. These permits will restrict new doctors to work only in certain regions. Turkey restricts service location choice of new medical graduates who want to work in the public sector. Recent medical schools graduates are required to work for the states for a period of 300 to 500 days after graduation. After this service period however, physicians wants to secure employment in urban areas (Phcpi, 2018^[60]).

Such regulatory approaches can be controversial with fears from professional association that designating where doctors should work impede recruitment. In this case, it is important to provide strong financial compensation to medical doctors.

5.4.3. Changing service delivery can help reduce geographical inequalities in access to care

There are several interventions on the supply side to promote the use of innovative health service delivery to provide adequate level of access to PHC in areas with fewer physicians (e.g. through telemedicine or telehealth) or shifting some health service provision from physicians to other health care providers. The strategy is not to train more doctors or to rely on more doctors, but rather to rely on smart information and communication technology and to maximise use of human resources already living in areas where there are shortages of medical doctors. This could constitute a good complement for usual care provided by medical doctors.

Expanding the role of nurses or community health workers

Unlike many other OECD countries, Brazil has not yet experimented with changing scope of practice and task shifting among health workers. More strategic use of the existing rural health workers other than

physicians who are already residing in areas where there are physician shortages will be crucial to meeting health care needs in more remote areas.

Core PHC functions, including comprehensiveness, continuity and co-ordination, can be discharged to health workers other than PHC doctors. In recognition, many OECD countries are moving to change the scope of practice of health professionals as a means of coping with health workforce shortage, which typically involves developing new roles for nurse practitioners and community health workers (OECD, 2020^[61]).

International evaluations of task shifting provide conclusive results. Nurse practitioners with proper education and training generally show that they can improve access to services, reduce waiting times and deliver the same quality of care as doctors for services such as routine follow-up of patients with chronic conditions (Maier, Aiken and Busse, 2017^[62]). Recent systematic review found that PHC teams that enable nurses to play a more advanced role in service provision (e.g. providing patient education, co-ordination, prevention advice or drug prescription) achieve better patient outcomes and greater patient satisfaction, while reducing hospitalisation (Matthys, Remmen and Van Bogaert, 2017^[63]). Moreover, another recent systematic review showed that scaling up reliance on nurse practitioners yielded greater access to care among rural and underserved populations without deteriorating the quality of care (Yang et al., 2020^[64]). In low and middle income countries, the implementation of task-shifting has been a key lever to fill the gap in PHC provision due to a lack of PHC doctors (Afobali et al., 2019^[65]).

Among OECD members, some countries such as Australia, and more recently France have sought to improve access to PHC by expanding advanced education programmes for nurses. In Australia, remote area nurses are recognised as the backbone of rural and remote PHC. They can work as part of a small team or work independently. With a rotation system, they are available 24 hours a day, seven days a week. They are able to work across diverse care settings, including acute, emergency, aged, palliative, mental health, family and community health care areas (OECD, 2020^[61]). Some Jurisdictions in Australia, including Queensland, and Victoria, have also implemented the Rural and Isolated Practice Endorsed Registered Nurse scheme. The scheme permits approved nurses to provide a limited range of medicines, where there is little or no access to PHC. In France, the National Health Strategy 2018-22 promotes more advanced roles for nurses to improve access to care, particularly in areas where there are relatively few doctors (OECD, 2020^[61]). The position of advanced practice nurses was legally created in 2018. These nurses provide support in the care of chronically ill patients and those with complex morbidities, working in co-operation with GPs and specialists in PHC teams and other health, and long-term care settings. Their tasks include prevention and screening activities, prescription of complementary exams and renewal or adjustment of medical prescriptions.

Brazil has amongst the most extensive education networks for nurse training in the LAC region. According to the Department of Management of Health Education in Brazil, the number of nursing schools amount to 790 in 2020, with several specialisation programmes being offered. In 2019, there were around 24 master's degrees programme in nursing, constituting powerful training spaces for developing advanced practice nurses (Cassiani and Silva, 2019^[6]; Neto et al., 2018^[26]).

Brazil can capitalise on its existing nurse training network to expand and recognise the role of advanced practice nurses, which in turn, can help alleviate the persistent workforce shortages in PHC. Advanced practice nurses in Brazil could contribute to the management of care of patients with mild acute diseases and chronic disorders, complementing the already practicing PHC doctors. Alternatively, they can be deployed in remote and underserved areas to help enhance access to qualified health professionals. Such a policy would require a thorough analysis on current nursing curriculums to further invest on core competencies including team practice, care co-ordination between and across health sectors, clinical and professional leadership, quality and safety management among other (Cassiani et al., 2018^[66]).

Beyond expanding the role of nurse practitioners, it is also warranted to make the most of community health workers within the Brazilian PHC team. Community health workers already play a crucial role in

PHC provision in Brazil. They are trusted members of the communities in which they work and have valuable knowledge of local health needs. In Brazil, there is scope to expand further their role toward more preventive activities and care management. In Alaska (United States), CHWs are the first point of contact with the health care system for the population living in very remote villages (Box 5.6). There, they provide preventive treatment, chronic care and emergency visits.

In a systematic studies review (Hartzler et al., 2018^[67]), community health workers are found to be able to perform three main functions:

- providing clinical services, such as assessment of vital signs, lifestyle advice, and routine examinations aided by remote communication with physicians;
- linking patients with community-based services, such as referrals for transportation or food assistance; and
- providing health education and coaching, to help patients achieve health goals and increase self-efficacy.

With serious workforce gap in Brazil, community health workers could play a bigger role, notably by taking a patient's medical history, conducting basic physical exams, ordering tests, counselling on preventive care. To date, CHWs in Brazil motivate patients to get care and bring test results to patients, check whether patients are taking medications, schedule appointments for individuals with other health professionals and encourage community members to seek care at the clinic (Wadge et al., 2016^[68]).

There is further scope to train CHWs in Brazil to directly address health needs and provide some clinical services, aided when necessary by remote communication with PHC doctors. The lack of opportunities to learn and advance in the community health worker role has already been noted elsewhere (Grossman-Kahn et al., 2019^[69]). So were the lack of recognition of their work, the poor communication and co-ordination between community health workers and the basic health units, as well as the lack of resources at the basic health units (Grossman-Kahn et al., 2019^[69]). Investments in CHW trainings, in streamlined IT systems and improved communication between CHW and other staff from the FHT will help expanding CHW roles.

Box 5.6. CHWs are the first point of contact with the health care system in remote part of the United States

In the United States, community health workers have a key role to address social determinants of health and to promote access to care for vulnerable and hard to reach populations (Hartzler et al., 2018^[67]). Community health workers, for example, provide PHC services in remote Alaskan villages, whose population would otherwise have no access to appropriate health care delivery (Golnick et al., 2012^[70]). They are the first point of contact with the health care system for the population living in these very remote villages. They work under the supervision of community health practitioners, and there is an integrated referral system that includes physicians, regional hospitals and a tertiary hospital (Golnick et al., 2012^[70]). The range of PHC services delivered by community health aides mostly includes care for chronic and preventive treatment, and emergency visits (often for respiratory distress and chest pain).

Furthermore, community health workers played a critical role as frontline health care workers during the first wave of the COVID-19 pandemic. In New York for example, community health workers provided educational sessions to patients with chronic conditions or at risks for chronic conditions to help them manage their conditions. They have also made home-visits, conducted wellness checks over the phone, helped people enrolling in online patient portals and prepared them for tele-health appointments. They served as support in navigating the health care systems, and mitigating fear and correcting misinformation in disadvantaged communities.

Source: Golnick et al. (2012^[70]), Innovative primary care delivery in rural Alaska, <https://doi.org/10.3402/ijch.v71i0.18543>; Hartzler et al. (2018^[67]) Roles and Functions of Community Health Workers in Primary Care, <https://doi.org/10.1370/afm.2208>.

Greater use of teleconsultations needs greater funding and new governance model

Improved use of alternatives to face-to-face consultations is another avenue for consideration to cope with PHC doctor shortages and geographical imbalances in Brazil. Telemedicine is used internationally to make PHC services available to patients closer to their home or work. It facilitates communication between patients and medical staff, as well as the transmission of medical records and other data between different locations (OECD, 2020^[61]).

Teleconsultation is a very promising way to improve access – both timely and geographically – and to relieve pressure on PHC physicians. Previous studies have shown that telemedicine improves access to care, reduces travelling costs and leads to better equity for rural and indigenous population (Oliviera Hashiguchi, 2020^[71]). Nearly 90% of international studies concluded that telemedicine interventions were at least as effective as face-to-face interaction (Oliviera Hashiguchi, 2020^[71]). Benefits can be found for preventing and controlling PHC sensitive conditions, like glycaemic control in diabetic patients, fewer hospitalisations for patients with chronic heart failure, effective pain management and effective management of health risk factors including exercise and nutrition (Oliviera Hashiguchi, 2020^[71]).

As already detailed in Chapter 6, telehealth has been in use in Brazil for quite some time now, especially in remote areas like the Amazon (Santos et al., 2016^[72]). In addition, the Brazil Telehealth Network Programme seeks to expand and improve PHC provision in regions with high social vulnerability, where the supply of health care services is very limited. The programme provides health care professionals that are part of the network both synchronous (real-time) and asynchronous teleconsultations, telediagnosics, second opinions and telelearning (Ministério da Saúde, 2020^[73]).

Telehealth services remain under-utilised in Brazil, despite evidence that points to beneficial effects. Available evidence shows that so far implementation of telehealth in PHC in Brazil has been associated

an improvement in child care, diabetes mellitus care, hypertension and women's health (Dos Santos et al., 2019^[74]). Despite this, from 2016 to July 2019, just under 3.5 million telehealth services across all levels of care (from tele-consultations to tele-learning sessions) had been registered in Brazil. Of these, 50% had taken place in the Southeast region and 36% in the South region. Only 1% of activities took place in the North region. Out of 26 Brazilian states, only 18 have telehealth centres participating in the network.

In many ways, telehealth initiatives in Brazil are promising, but several factors impede the development of telehealth. These impediments include the lack of funding, the lack of training, the lack of equipment for FHT and a fragmentation of governance mechanisms (see Chapter 6 for more details). Argawal et al. (2020^[74]) noted that Brazil lacks guidelines around reimbursement models and regulatory frameworks for telemedicine.

There are successful experience across the OECD, where telemedicine services have been used to expand access to care among rural and remote patients. Canada and Australia are two examples, where large investments have been made to make access to telehealth services a reality:

- In **Ontario, Canada**, the Telemedicine Network includes 120 virtual care systems to connect communities to care across the province (Ontario Telemedicine Network, 2021^[76]). In 2017, the Ontario Telemedicine Network supported more than 896 000 visits (Agarwal et al., 2020^[75]). The province of Saskatchewan has also been using telehealth technology for over a decade to reach rural and remote locations (Ontario Ministry of Health, 2021^[54]). Patients can receive PHC by visiting the nearest telehealth site and meeting with a professional in a virtual exam room. Telehealth can connect to available diagnostic peripherals, such as stethoscopes, vital signs monitors and ultrasound equipment, making real-time diagnosis and patient monitoring possible. In rural and remote areas, telehealth services are particularly used for mental health and addiction appointments, for prescription refills and chronic disease management. In addition, Saskatchewan began piloting remote presence technology for a number of North communities in 2017 (OECD, 2020^[61]). The project allows the PHC team in the community to have access to expertise (such as physician, nurse or pharmacist, etc.) on demand. Overall, previous experiences with telemedicine in Ontario (called Champlain BASE) have been shown to be cost-effective for the provision of specialist care. The cost of traditional referral to a specialist provider was, on average, CAD 133.60 per case; versus CAD 47.35 per case for a teleconsultation service on average (Agarwal et al., 2020^[75]).
- **Australia** has also made large investment in telehealth services to be used for specific health conditions such as chronic conditions and dermatology for people (OECD, 2015^[77]). In the Northern Territory, PHC doctors can be anywhere in Australia, and assist remote nurses and Aboriginal health practitioners to manage chronic disease patients appropriately by reviewing pathology and assessment results, then have case discussions with the local team. They also monitor and advise on other pathology testing. The medical practitioners consist of a group of general practitioners, who have usually previously worked in remote Northern Territory, and have moved away but can continue to provide quality care for remote patients through the use of a web-based electronic patient record with a unique patient identifier. Remote nurses and Aboriginal health practitioners can then contact a doctor who understands the conditions and circumstances they are providing care in. The Australian College of Rural and Remote Medicine also developed Tele-Derm, an online resource enabling rural doctors to receive advice on the diagnosis and management of skin disease. A rural doctor submits a photo of a skin condition, together with information on the patient's history and a possible diagnosis. A dermatologist responds usually within two days with a diagnosis and treatment options. PHC doctors can also access online case studies and education opportunities.

To address workforce shortages through a wider use of telehealth, Brazil will need to establish a governance structure that better support municipalities with insufficient resource capacity. Greater financial

support and adequate training will be required to avoid compounding existing social divides (see Chapter 6).

5.5. Increasing the recognition of the PHC specialty and ensuring high quality of medical education

Beyond addressing the uneven geographic distribution of PHC physician, there is an urgent need to increase the recognition of the PHC specialty and to ensure high quality of medical education in Brazil. Actions are needed in three broad areas:

- Standardising the contractual arrangement of PHC workers, with a more consistent salary scale across the country;
- Improving the academic incorporation of the family and community medicine specialty in graduate and post-graduate programmes to improve its credibility and recognition;
- Introducing quality measures to medical education to secure a high quality PHC workforce through a national licensing examination, making the specialty training in PHC compulsory for all medical doctors wishing to practise PHC, and implementing stronger requirements around continuous medical education.

5.5.1. Standardising the contractual arrangement for PHC workers

There are avenues for Brazil to improve the attractiveness of the PHC profession through a greater standardisation of contractual arrangement outside of the *Médicos pelo Brasil* programme. As each municipalities define the level of salaries, bonuses and other payment mechanisms, there is wide heterogeneity in these arrangements between municipalities. In Brazil, stronger oversight and regulation from the federal government is warranted to ensure consistency across the country. It could be important to make sure that small municipalities offer similar contracts as bigger municipalities, with a more consistent salary scale across the country. The new Agency of the Development of PHC could have a role to play in this direction.

Across OECD countries, Turkey implemented a similar strategy with the Health Transformation Programme launched in 2005. The overarching objective was to strengthen family medicine and PHC, notably through establishing new contractual arrangements for family physicians. Before the Health Transformation Programme, contractual arrangements and roles of family physicians were loosely defined. With the implementation of the health reform, family physicians have started to be paid according to national terms and conditions, and with more generous salaries and improved working conditions.

5.5.2. Improving the credibility and recognition of the specialty of PHC in Brazil

While the Family Health Strategy has made access to PHC a priority, the country has not invested well in building a strong credibility and recognition of the specialty of family and community medicine. In Brazil, the FCM specialty is the last option among physicians. Available evidence shows that the specialty of PHC is the first option for only 1.5% of recent graduates among the 55 specialties (Scheffer et al., 2018^[11]). It is important to add that the specialty is not recognised as a knowledge area by the Federal Agency for Support and Evaluation of Graduate Education, meaning that funding research and investment in this research area has traditionally been very low.

The low degree of academic incorporation of the family and community medicine specialty in graduate and post-graduate programme has been found to impede building a strong recognition of this specialty in Brazil (Wenceslau, Sarti and Trindade, 2020^[78]; Fontenelle et al., 2020^[79]). Few researchers build their carrier

around PHC, and perhaps as a consequence, PHC departments in universities and medical schools are very rare.

A strong academic incorporation is however critical to allow transmission of the specialties' value and allow a practice to be recognised by other health care professions. Without such promotion, it is very difficult to promote FCM among the students and to encourage them to choose this specialty as their future career. Low academic incorporation also reduces scientific production in the area of FCM, and limits it to collective health (Wenceslau, Sarti and Trindade, 2020^[78]; Fontenelle et al., 2020^[79]). Arguably, the specialty of family and community medicine is undervalued in Brazil, explaining why there is still bottleneck in filling physician vacancies in FHTs. Even with the implementation of the More Doctors programme, which has managed to allocate more than 16 000 new professionals to PHC since 2013, unfilled medical positions in FHTs are still common (Giliate Cardoso Coelho, Valeska Holst and Aristides, 2019^[18]).

Serious efforts are needed to counter the misconception that PHC is merely health care for the poor or the marginalised people, that it is a profession without much qualification, a second-rate profession (Justino, Luzón Oliver and Palhano de Melo, 2016^[19]). The knowledge, skills, responsibilities and core competencies of the family and community medicine speciality should be evident to all population groups and from all other health care professionals. The creation of academic departments of family and community medicine in all medical schools is a prerequisite to undertake research in PHC, develop clinical guidelines specific to PHC, as well as teach the specialty. Dialogue, inter-disciplinary collaboration with other specialists and mutual respect between health professionals are also key to support this.

When good family and community medicine curriculums are in place for both students and residents, it becomes possible to attract students to this specialty (Blasco et al., 2008^[80]). Family physicians who are recognised for their academic competence, leadership and who teach PHC practice with determination can awake a sense of vocation in their students, and will also win prestige among other health care professionals. Strong academic incorporation is also a prerequisite to develop and encourage further continuing medical education for all medical doctors who practice currently with no specialty training, helping to maintain and improve the quality of care.

Brazil could build up from experiences that have allowed to make good steps towards incorporating PHC as a core scientific area in some federal universities. For instance, the Master's Program in PHC at the Federal University of Rio de Janeiro, or the Family Health Master's Programs at the Federal Universities of Ceará and Mato Grosso do Sul. At the same time, Brazil could also build from successful experiences of network of Family Health Professional Master's, which attracted a high number of professionals: the programme of the Family Health Training Northeast Network (RENASF) created in 2009 (RENASF, 2012^[81]), and the Family Health Professional Master's (ProfSaúde) created in 2016 (ProfSaúde, 2019^[82]). Such good local initiatives could be consolidated by the federal government to design a National Family and Community Medicine postgraduate programme for Brazil.

5.5.3. Introducing quality measures to medical education

Implementing a national licensing examination

While the Ministry of Education in Brazil regulates medical education nation-wide, more could be done to secure standardisation of the medical curriculum in Brazil. The inadequate academic programme and gap in medical education between medical schools is an area of concern.

To achieve greater standardisation of the medical curriculum and teaching across the country, Brazil could introduce a national test at the end of the university period. The implementation of a standardised national exam would replace each final exam in medical schools. The national licensing examination will not replace accreditation performed by the INEP or the CFM, but rather complement it.

A national licensing examination would assess both knowledge and clinical skills of undergraduate students. This is a necessary step to improve the public trust and confidence in physicians. It will make transparent that all medical doctors in Brazil are competent in their clinical skills and medical knowledge. There are several advantages of establishing a national examination (Bajammal et al., 2008^[83]):

- First, the use of a standardised national exam is the best way to ensure any medical graduate or practicing doctor in Brazil has achieved at least a common standard of medical knowledge and clinical skills competencies. This would ensure that minimum standards and minimum competencies are met.
- Second, a national examination would act as a tangible and standard measurable outcome to identify areas in need for potential improvement in the curriculum and teaching methods. It could be used to benchmark medical schools across the country, and to correct any potential problem or deficiency in the curriculum or teaching method.
- Third, a national exam could be used as a reliable and transparent measure of candidates' qualification for post-graduate program's application. In other OECD countries such as France and Italy, allocations to specialist schools are determined by the results of the national examination. This approach is seen as a more meritocratic and transparent way to attribute specialist training places.

The national examination has been increasingly used across OECD countries. This is a mandatory requirement to practise medicine in Canada, France, Italy, and just recently in the United Kingdom. While the United Kingdom has relied on external examiners and inspection carry-out by the General Medical Council to assure quality across the United Kingdom medical schools, the country is introducing a Medical Licensing Assessment which will test the core knowledge, skills, and behaviours needed to practise medicine (Box 5.7). The overarching objective is to drive up high standards for medical schools in the United Kingdom (CMC, 2020^[84]). Brazil could learn from the United Kingdom's experience in building the Medical Licensing Assessment, and the role played by the General Medical Council.

At the same time, it will be important to ensure that doctors who qualified abroad pass a national licensing examination in order to be eligible to practise in Brazil. This approach is taken internationally – for example in the United States, Canada, France or the United Kingdom. In these countries foreign medical graduates must pass licensing examinations in order to be eligible to practise in the country, and then be able to enrol in a residency programme and pass the post-graduate examination. This system ensures every foreign graduate has at least the minimum competences to function as a physician, according to the licensing body standards of the country. In the United Kingdom, international medical graduates have to pass the Professional and Linguistic Assessments Board (PLAB) test (GMC, 2021^[85]). The PLAB Test helps make sure doctors who qualified abroad have the right knowledge and skills to practise medicine in the United Kingdom. From early 2024, international medical graduates will also have to take the MLA if they are applying for registration with a license to practise in the United Kingdom (Box 5.5). In Australia, international medical graduate seeking general registration as a medical practitioner needs to undertake the Standard Pathway which consists of the completion of a written examination (CAT MCQ) and structured clinical examination of the Australian Medical Council (AMC, 2020^[86]).

With the new *Médicos pelo Brasil* programme, the Revalida system will be a compulsory requirement for foreign medical graduates. This is an important step going forward to ensure that all medical doctors who qualified abroad have the right knowledge and skills to practise medicine in Brazil. As in the United Kingdom and Australia, revalidation consists of a theoretical written test and a practical clinical skill test, covering all level of health (primary, secondary, clinical, surgical). It might be warranted to better target the Revalida Test toward specific clinical areas or level of care depending on the profile of each graduate to better recognise their qualifications.

Box 5.7. The United Kingdom is introducing a Medical Licensing Assessment

The United Kingdom has traditionally relied on external examiners – visiting medical educators from other organisation – and General Medical Council inspection to assure quality across UK medical schools. Medical schools used to set their final exam independently in line with the General Medical Council's outcomes for graduates. However, the United Kingdom is introducing a Medical Licensing Assessment (MLA) which will test the core knowledge, skills, and behaviours needed to practise in the country. Medical students graduating in the academic year 2024-25 will need to pass the MLA as part of their medical school degree before they can join the medical register. The MLA test will have two-part: an applied knowledge test that will be computer-based, and a clinical and professional skills assessment. The aim is to provide a standardised mean of assessing all UK doctors, which in turn will help ensure patient safety. The benefit of the new system is, for the first time, to demonstrate that graduates from each medical school have met an agreed standard of proficiency and are well prepared to practise medicine. The work entailed by the MLA will be overseen and regulated by the General Medical Council. This work will consist of:

- Defining the range of professional skills, knowledge and behaviours a candidate needs to have achieved to be ready to practise medicine in the United Kingdom;
- Approve procedures to compile test questions and papers, set standards and run exams;
- Take corrective action if through its quality assurance processes, it considers that standards are not met;
- Be responsible for using information and data from the exams to apply a consistent approach to the assessment of international medical graduates.

Under this agreement, medical schools will continue to develop and deliver their own curricula and prepare students for the MLA, which will be regulated by the General Medical Council.

A process of phased introduction will begin from 2021 with robust testing and piloting, and the assessment will be fully implemented for students graduating from UK medical schools from the academic year 2024/25.

Source: CMC (2020^[84]), <https://www.gmc-uk.org/news/news-archive/gmc-and-msc-welcome-agreement-on-medical-licensing-assessment-delivery-model>

The specialty of family and community medicine should be a mandatory requirement to be allowed to practise PHC in Brazil

As earlier mentioned, most doctors working in FHTs do not have a specialist post graduate training in FCM. Brazil is currently aiming for each FHT to have a FCM specialist with the implementation of the new Doctors for Brazil programme. The new programme will make the specialty training in PHC compulsory for all medical doctor wishing to practise PHC. Arguably, this new programme will help deliver more effective and patient-centred care. The benefits of specialist PHC has already been demonstrated elsewhere: PHC specialists place a stronger emphasis on preventive interventions and early management of health conditions, and are more likely to address the majority of patient's need, as well as to help them to co-ordinate care with other health services contributing to better quality and responsiveness (OECD, 2020^[61]).

Currently, at least 22 OECD countries (Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Estonia, France, Greece, Israel, Italy, Ireland, Latvia, the Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom) have introduced a post-training

requirement to practise PHC. Such a professionalisation of PHC specialists goes along with the formation of professional organisations, scientific research in PHC, or the development of guidelines. This is warranted for driving up quality and patient-centred PHC in Brazil.

Requirements around continuous medical education for PHC medical doctor could be implemented

Continuing medical education (CME) includes the acquisition of new knowledge, skills and approaches considered useful for developing competent and experienced medical practice. It helps medical doctors maintain their competence and acquire new skills throughout their careers. This is critical to keep practice up-to-date, and to make sure medical doctors possess the skills useful and needed in daily practice to respond to evolving patients' needs.

In Brazil, the Política Nacional de Educação Permanente em Saúde was instituted in 2004 as the main mechanism to encourage continuing professional development. It is based on participatory teaching and learning approaches at the practice level. The overarching objective being to improve the skills and fill gaps in competence according to patients' health needs in daily practice, rather than updating medical knowledge using didactic approaches. While continuing professional development is a good practice to continuously and actively improve the skills and competences of medical doctor, the uptake of this activity within FHTs remains unknown.

In addition, CME is voluntary in Brazil. There is no specific requirement for each medical doctor. The take-up of CME relies upon professional and individual choice, without any regulatory approach, peer evaluation requirement or re-certification requirement. The current system does-not guarantee high standard of competencies for PHC doctors, and does not ensure their fitness to practise throughout a career. So far, it is impossible to know whether and how many PHC medical doctors have undertaken CME.

A number of bodies such as the CONASS, CONASEM, the Brazilian Medical Association, the SBMGC or the SOBRAMFA organise several training, conferences and internet-based learning model. These are all valuable approaches. However, a more formal CME framework, which makes clear the expectation upon PHC doctors and supports them to meet it, will constitute a marked improvement. Brazil could introduce strong requirements around CME for PHC physicians, as experienced by other OECD countries including Norway, the Netherlands or the United Kingdom (OECD, 2014_[12]). In the United Kingdom and the Netherlands, CME for PHC medical doctor is compulsory and linked to re-certification. PHC physicians need to demonstrate that they have regularly participated in CME activities and there is a peer evaluation regarding professional skills. To be successfully re-certificated, PHC physicians need to achieve at least 50 CME credits per year. Norway use financial incentives to increase compliance with CME requirements. Specialists in PHC are able to charge higher fees for each consultation than regular GPs if they have followed a number of CME courses. This gives strong incentives to comply with national requirement, which in turn improve their competencies and performance.

Experiences from OECD countries could be helpful to inform Brazil on ways to implement requirements and mechanisms to secure compliance to CME requirements. The Agency for the Development of PHC and municipalities could for example add a requirement to demonstrate the attendance or completion of some specific training in the local contracting of PHC doctors. Using the contracting arrangement could actively push PHC doctors toward compliance with CME requirements, and encourage quality improvement. If strong CME requirements are introduced in Brazil, the country should also ensure that CME is directed towards some of the key challenges of the health care system, for example on prevention of risk factors for health and management of chronic conditions.

5.6. Conclusion

In Brazil, problems of shortage of PHC doctors and regional disparities in supply are acute. They are leading factors of lower health outcomes, lower health care quality and can result in unmet health care needs for Brazilian's most remote population. While the implementation of the More Doctor Programme in 2013 led to positive improvements with greater investment in PHC infrastructure, better access to medical training, and increased number of recruitment in underserved communities, more needs to be done to increase and ensure a more even distribution of PHC medical doctors. The new federal programme *Medicos pelo Brazil*, which has a stronger focus on quality than the previous programmes, aims at expanding the number of PHC doctors to 7 500 in the poorest areas. To meet this ambitious target, strategic thinking toward the community targeting methods will be required to make sure that all eligible municipalities are effectively enrolled to the new federal programme.

At the same time, and as informed by the experiences of OECD countries, it will also be important to increase the number of rural trained doctors and to provide both wage- and non-wage related financial incentives – linked for example to a service obligation of between two and four years – to recruit and retain doctors in underserved areas. Restricting the choice of practice location is another strategy to ensure a more even distribution of medical doctors. At any rate, such solutions require careful and coherent workforce planning in Brazil, based on an objective assessment linked to socio-demographic characteristics of medical doctors, their work processes and population health needs.

A smarter use of existing local workforces (nurses and community health workers), and changes in scopes of practice, are innovative ways that Brazil might want to consider in the future. The country should also continue to expand the use of telehealth to facilitate access to PHC in places with fewer physicians. To this end, it will be crucial to establish a governance structure that better supports municipalities with insufficient resource capacity to avoid compounding existing social divides.

While much policy attention has been directed to improving access to PHC, little attention has been devoted to building a strong credibility and recognition of the PHC specialty, and to ensuring high quality and well-skilled medical doctors. Actions to improve the academic incorporation of the FCM specialty in graduate and post-graduate programmes are needed through for example the development of additional family and community medicine departments in medical schools. To secure high quality PHC medical doctors and ensure their fitness to practise throughout their carrier, there are high opportunities to make the specialty training in FCM compulsory for all medical doctors wishing to practise PHC, and to implement stronger requirements around continuous medical education and recertification.

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