

## International strategies for flexibilization of the regulation of health workforce practices in response to the COVID-19 pandemic: a scoping review

Estratégias internacionais de flexibilização da regulação da prática de profissionais de saúde em resposta à pandemia da COVID-19: revisão de escopo

Estrategias internacionales de flexibilización de la regulación de la práctica de profesionales de salud en respuesta a la pandemia de la COVID-19: revisión de alcance

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### Abstract

COVID-19 was declared a pandemic by the World Health Organization (WHO) on March 11, 2020. Given its rapid spread, governments, communities, and health services are having to act with the same speed to expand their health workforce capacity. Based on the scoping review method, this study aimed to identify the principal strategies related to measures for flexibilization of regulations on healthcare workers' practices that have been adopted and/or recommended internationally. The study followed the stages proposed by the Joanna Briggs Institute. The research question was developed with the PCC method (population, concept, and context). Searches were performed in PubMed, Scopus, WHO Database, and the gray literature. A total of 36 documents were identified, classified in the following strategies: (1) expansion of scope of practice; (2) shifting of roles from one professional category to another; (3) authorization for patient care and billing via telemedicine; (4) licensing and recruitment of inactive workers; (5) recruitment of workers from other regions/states; and (6) changes in basic training and supply of new training. One of the most important strategies in response to health workforce shortages has been the willingness to adapt, expand, and redistribute workers' activities to deal with rapid changes. This review reflects the importance of reforms in workforce regulation to optimize the existing health workforce so that it can meet the population's constant needs and demands.

COVID-19; Pandemics; Health Workforce; Professional Competence

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## Introduction

COVID-19 was declared a pandemic by the World Health Organization (WHO) on March 11, 2020. Highly transmissible, the disease spread quickly throughout the world. By April 2021 there had been more than 140 million cases and 3.1 million deaths in the world. During the same period, Brazil had recorded 14 million confirmed cases and 400,000 deaths <sup>1</sup>.

The possibility and/or confirmation of health workforce shortage is a source of concern in various countries, especially those that already suffer with this situation historically. Given the rapid spread of COVID-19 and the rapid increase in hospitalizations, leading to collapses in health systems, government officials and health services are having to act at the same pace to protect, maximize, and expand the health workforce. The current scenario, in addition to the greater potential for contamination and subsequent absence of health workers, is aggravating the shortage of professionals, both in the front line of care and in health services in general <sup>2</sup>.

Publications in the Brazilian and international press have warned of the high number of workers infected with the novel coronavirus <sup>2,3</sup>. Estimates suggest that frontline workers represent 10 to 20% of diagnosed cases <sup>3</sup>. As of April 2021, Brazil had more than 54,000 infected nurses, with 773 deaths representing a third of overall healthcare worker deaths according to data from the Brazilian Federal Council of Nursing (COFEN) <sup>4</sup>. Meanwhile, the Brazilian Federal Council of Medicine (CFM) announced that 810 physicians had died of COVID-19 since the start of the pandemic <sup>5</sup>.

One of the main responses to COVID-19 in various countries, including Brazil, has involved actions, such as, the expansion in the number of beds and opening of field hospitals. However, this requires trained workers in sufficient number to staff these new services <sup>6</sup>. Thus, there is both high potential for contagion and resulting sick leave for frontline workers and a constantly increasing demand to expand the health workforce.

COVID-19 care requires an approach to patients in different phases of the infection. In addition to focusing correctly on acute treatment and prevention through isolation and social distancing measures, governments must work to guarantee an adequate health workforce for those patients who require rehabilitation after hospital discharge or post-acute care, besides routine patients in hospitals and other healthcare establishments such as long-stay institutions for the elderly and prison installations <sup>7,8</sup>. No less important is the continuous guarantee of provision of care in primary healthcare (PHC), maintaining the focus on the more serious health problems and monitoring patients with chronic noncommunicable diseases, who represent a risk group for the novel coronavirus, besides contributing to controlling the pandemic through surveillance activities, attention to mild COVID-19 cases, and support for vulnerable users <sup>6,8</sup>.

Research groups and healthcare organizations have identified possible paths to address workforce shortages, including measures to flexibilize labor regulations on the scopes of practice for the health workforce. Professional regulation generally consists of a set of guidelines and mechanisms established by governments that impact the labor market (supply, demand, prices, pay scales, etc.) and health services, defining and demarcating the fields of action as well as activities exercised exclusively by certain professions <sup>9</sup>. Meanwhile, the scope of practice defines a profession's parameters <sup>9</sup>. It is characterized by a set of activities, roles, and procedures for which the professional has legal authorization, training, and competence to exercise safely <sup>9,10,11</sup>.

A WHO document with proposals and actions to strengthen responses by health systems to deal with COVID-19 recommended considering alternative models of healthcare provision, including the expansion and sharing of workers' scopes of practice <sup>12</sup>. Publications by the group Cochrane Effective Practice and Organisation of Care also include such proposals, as the transfer of roles from a professional category with higher training level to another with lower training, known as "task-shifting" <sup>13</sup>, and transferring patients or cases between professional categories, such as from physicians to nurses <sup>14</sup>.

Such measures have been acknowledged for decades and have been used increasingly to optimize and offset health workforce shortage, mainly because rigid professional regulation poses a known barrier to access health services <sup>9,10,11</sup>. In the health field, regulation demarcates the paths for exercising the profession, based on minimum training requirements that enable the professional to act safely. Regulatory laws tend to be rigid, often preventing professionals from adapting their practice

to emerging situations such as the COVID-19 pandemic. Although regulations of health workforce practice are not based on rare events, they should be flexible enough to adapt to emergencies<sup>15</sup>.

In the COVID-19 scenario, little is known about the strategies countries are using to deal with situations of workforce shortage. We conducted thus a scoping review to identify and summarize the main international strategies related to measures for flexibilization of regulations on healthcare workers' practice that have been adopted and/or recommended during the pandemic. This is a relevant objective for health workforce planners who aim to increase their capacity, expand access and alleviate situations of shortage.

## Methodology

Scoping review is a literature review methodology that has become increasingly common for mapping the state-of-the-art in a field of interest in terms of the volume, nature, and main characteristics of the primary research. It can be performed as a stage prior to the other types of reviews, allowing a broader approach to research questions<sup>16,17</sup>. Cacchione<sup>17</sup> identifies three characteristics that distinguish scoping review from other methods: mapping the research and key underlying concepts; providing a synthesis compiling a broad set of materials besides peer-reviewed articles and periodicals, allowing gray literature; and including heterogeneous sources rather than focusing only on the best evidence.

We chose this methodology to explore the available information, considering strategies that involve flexibilization of healthcare workers' regulation and scopes of practice during the COVID-19 pandemic. To develop the research question, we used the PCC method (population, concept, and context), a strategy that helps identify key topics and is recommended in scoping reviews<sup>15</sup>. We defined the following question: "What evidence and information exist on strategies related to regulation and flexibilization of scopes of practice, aimed at increasing health workforce potential in response to situations of worker shortage and lack of access to health services during the COVID-19 pandemic?".

The study was based on recommendations by the Joanna Briggs Institute<sup>15</sup> and featured the following stages: (1) elaboration of the research question and definition of keywords; (2) conduction of the research; (3) document selection based on reading titles and abstracts, following the inclusion and exclusion criteria; (4) reading of full text and categorization of the included documents; (5) summarization and analysis of findings; and (6) presentation of principal results.

Different strategies were adopted to locate both scientific and academic articles and gray literature, which included: searches with keywords (Box 1) in abstracts and titles in PubMed, Scopus, and WHO Database; searches in websites of international organizations and institutions related to labor regulation and/or that compile and distribute publications from other sources on the topic, such as the Health Workforce Technical Assistance Center, Health Workforce Hub, Canadian Health Human Resources Network Library; searches in the references from the selected articles; and free search in Google, Google Scholar, and the press. The searches were conducted in September and October 2020.

Inclusion criteria were studies on the topic, regardless of the type of publication, such as articles, reviews, editorials, perspectives, opinions, short communications, or specials and news. We excluded duplicate articles and those not dealing directly with measures for flexibilization of health workforce regulation and/or scopes of practice. The review was limited to 2020, considering that the pandemic began in December 2019. The review was performed according to PRISMA guidelines (*Principal Items for Reporting Systematic Reviews and Meta-analyses*), based on an extension for scoping reviews<sup>18</sup>.

The flowchart presents the document selection. We identified 1,513 documents in PubMed (n = 490), Scopus (n = 918), and WHO Database (n = 105) and 13 in other sources. After eliminating duplicates, a selection was performed according to titles, abstracts, and reading of full texts, a stage which included six more documents identified in the articles' references. Based on the inclusion criteria, 36 records were selected for the scoping review (Figure 1).

**Box 1**

Keywords for database searches.

1) Population	workforce OR health workforce OR health professional OR healthcare providers OR health worker OR health personnel OR human resource OR human resource for health OR healthcare workers OR doctor OR physicians OR physician assistants OR physicians associates OR clinical assistants OR intensive care OR intensivist OR intensive care physician OR nurses OR intensive care nurses OR nursing advanced practice nurse OR nurse practitioners OR advanced practice registered nurses OR clinical nurse specialist OR advanced practice nursing OR physiotherapists OR dentist OR pharmacist
2) Concept	task-shifting OR skill-mix OR delegat* OR substitut* OR expanded role OR expanded scope of practice OR "scope of practice" OR professional role OR scope of practice regulation OR professional regulation OR health professional regulation OR flexibili* OR health professional shortage OR physician shortage OR workforce shortage OR practice guideless OR professional competence OR health workforce planning OR human resource planning OR access to care
3) Context	COVID-19 OR new coronavirus OR pandemic* OR "pandemic outbreak OR disease outbreak OR Influenza A OR Coronavirus Infections OR Pandemic influenza OR SARS OR SARS virus OR Severe Acute Respiratory Syndrome OR Pandemic response OR Coronavirus OR Epidemic*
Combined (AND) 1, 2 and 3	

Source: prepared by the authors.

**Results and discussion**

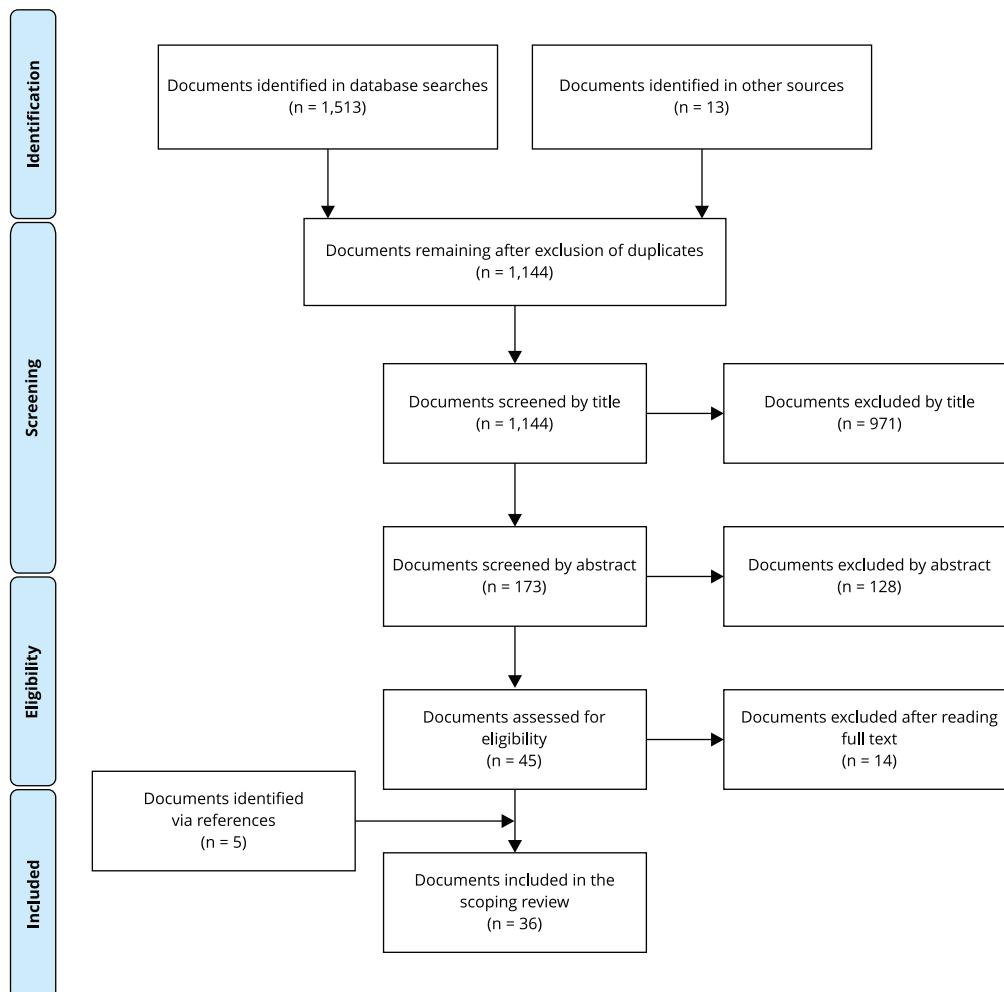
Of the 36 documents, 21 were articles and the others included short communications, notes with recommendations, news, commentary, or editorials. After complete readings, documents were grouped according to the recommended (n = 18) and adopted strategies (n = 18), based on similarities described in the documents, including types of strategies, workers involved, and reference country.

Besides identifying the principal strategies related to regulation and flexibilization of scopes of practices, the analysis pointed to other initiatives addressed in the selected documents. The findings were organized in the following categories: (1) expansion of the scope of practice; (2) task-shifting; (3) telemedicine; (4) licensing and recruitment of inactive workers; (5) recruitment of workers from other regions/states; and (6) training.

Concerning workers' categories, 11 documents exclusively addressed nurses with advanced training and with different backgrounds, specializations, categories, and nomenclatures, varying between countries, for example, advanced practice registered nurses (APRN) in the United States and clinical nurse specialists in Canada. To facilitate the reading, the current review refers to all these professionals as advanced practice nurses (APN), regardless of the nomenclature, category, and country of origin. Seven documents exclusively discussed pharmacists; four, physicians; two, dentists; two, paramedics; one, physician assistants (PAs); and nine, more than one professional category or about healthcare workers in general. Most of the documents were from the United States (n = 20). Boxes 2 and 3 summarize the main strategies recommended and adopted, the countries, and the professional categories involved.

**Expansion of scopes of practice**

The flexibilization of regulatory barriers on healthcare workers' scopes of practice has been debated for years by healthcare and research organizations, with a focus on optimizing health workforce, contributing to the expansion of access to services, and reducing impacts of worker shortage and health-related costs<sup>9,10,11</sup>. Strategies to expand healthcare workers' scopes of practices were recur-

**Figure 1**Document selection process (PRISMA flow – *Principal Items for Reporting Systematic Reviews and Meta-analyses*).

rent in the review (n = 25), both recommended<sup>19,20,21,22,23,24,25,26,27,28</sup> and adopted<sup>15,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43</sup>.

In various countries, APN have the competence and training to perform various roles and procedures. However, regulations on scopes of practice vary in terms of the extent of activities that can be performed (with or without medical supervision), potentially limiting their action, varying between countries and sites. The expansion of scopes of APN practice has been recommended as a strategy to increase health workforce capacity during COVID-19<sup>20,21,23,24</sup>. The recommendation is to redesign the existing scope, expanding it to maximize the contribution of nurses, allowing them to act to the limit of their license<sup>24</sup>. They are often underutilized workers that can help alleviate shortages and poor distribution of other healthcare workers, besides improving the quality of services provided and reducing health-related costs<sup>23</sup>.

To increase the health system's flexibility and capacity to respond to the pandemic, various American states suspended the laws regulating the scopes of practice of APN, removing barriers to broaden

**Box 2**

Recommended measures and strategies, professional category, and country.

RECOMMENDED MEASURES AND STRATEGIES	PROFESSIONALS	COUNTRIES
Expansion of scope of practice	Physician assistants <sup>21</sup> Nurses <sup>21,23,24</sup> Pharmacists <sup>19,39</sup> Physicians <sup>21,27,28,34</sup> Paramedics <sup>22,34</sup> Unspecified <sup>20,25</sup>	Canada <sup>27,28</sup> United States <sup>19,20,24,25,34,39</sup> United Kingdom <sup>21</sup> Various <sup>22,23</sup>
Task-shifting	Dentists <sup>47,48</sup> Unspecified <sup>20</sup> Physician assistants <sup>26</sup>	United States <sup>20</sup> United Kingdom <sup>47,48</sup> Canada <sup>26</sup>
Telemedicine	Nurses <sup>50</sup> Pharmacists <sup>19,49</sup> Unspecified <sup>25</sup>	United States <sup>19,25,49,50</sup>
Recruitment of recent graduates or final-year students	Unspecified <sup>20</sup> Medicine <sup>52</sup>	United States <sup>20,52</sup>
Education and training	Dentists <sup>47</sup> Physicians <sup>21,54,55</sup> Paramedics <sup>22</sup> Unspecified <sup>20</sup>	United States <sup>20,54</sup> United Kingdom <sup>21,47</sup> Various <sup>22,55</sup>

Source: prepared by the authors.

their scopes of practice and allowing them to act to the full extension of their professional qualifications <sup>15,30,33,34,35,36,37,38,40,43</sup>. These measures, with variations between sites and nursing categories, include loosening of requirements for medical supervision in various activities, expansion of tests they can order and drugs they can prescribe <sup>30,37,38,40</sup>. In Canada, APNs have also received temporary authorization to expand their practices <sup>42</sup>.

The recommended and adopted flexibilization measures also include pharmacists <sup>19,29,31,32,34,39,41,43</sup>, physicians <sup>21,27,28,34</sup>, paramedics <sup>22,34</sup>, and PAs <sup>15,21,26</sup>. Pharmacists, for example, have the potential to help improve access by relieving the workload on physicians, who can dedicate their time to more complex cases. The continuity of care of chronic patients in PHC by pharmacists can further contribute to reducing hospitalization. The suspension of regulatory measures should include permission for pharmacists to initiate COVID-19 treatment and prescribe, order, renew, and substitute medicines without physician authorization <sup>19</sup>. Temporary relaxation of restrictive measures on pharmacists has been adopted and recommended in different countries such as Ireland <sup>29</sup>, China <sup>31</sup>, United States <sup>19,32,34,39,43</sup>, Canada <sup>32</sup>, and United Kingdom <sup>41</sup>.

The Manitoba College of Physicians and Surgeons in Canada recommends the flexibilization of work for physicians to perform activities outside of what would be considered their usual scope of practice in their specialty. However, a caveat is that physicians should only perform activities that are safe and appropriate in their personal judgment <sup>27,28</sup>.

According to Boehringer et al. <sup>22</sup>, changes in paramedics' practice should also be supported by regulatory changes. According to the authors, many health systems are missing the opportunity to use paramedics' skills and knowledge to perform activities related to airway management and ventilation. The state of Pennsylvania (United States) changed its rules for paramedics and emergency medical technicians to be able to perform a variety of health procedures, depending on their degree of training and experience <sup>34</sup>.

**Box 3**

Adopted measures and strategies, professional category, and country.

ADOPTED MEASURES AND STRATEGIES	PROFESSIONALS	COUNTRIES
Expansion of scope of practice	Physician assistants 15,26 Nurses 15,30,33,34,35,36,37,38,40,42 Pharmacists 29,31,32,34,41,43 Physicians 28,34 Paramedics 34 Emergency care technicians 34	Canada 26,28,32,42 China 31 United States 15,30,32,33,34,35,36,37,38,40,43 Europe 32 Ireland 29 United Kingdom 41
Task-shifting	Nurses 46	Unspecified 46
Telemedicine	Nurses 51 Pharmacists 31,32 Unspecified 2	Canada 32 China 31 United States 2,32,51 Europe 32
Recruitment of recent graduates or final-year students	Nursing 30,46 Medicine 15,20,34,46 Unspecified 2	United States 2,15,20,30,34 Various 46
Recruitment of retired professionals	Nurses 2,15,34,43 Pharmacists 29 Physicians 2,15,34,43	United States 2,15,34,43 Ireland 29
Recruitment of foreign professionals	Physicians 33,46 Nurses 46	United States 34 Various 46
Recruitment of professionals from other regions	Nurses 15,34,40 Physicians 15,34 Unspecified 2,46 Various 43	Canada 46 United States 2,15,34,40,43
Education and training	Nurses 46 Unspecified 2	United States 2 Various 46

Source: prepared by the authors.

Concerning PAs (workers who perform clinical and surgical services under direct or indirect physician supervision), the Canadian Association of Physician Assistants recommends expanding their prescription rights to be able to renew prescriptions on controlled drugs and to complete death certificates <sup>26</sup>.

Levisohn & Higgins <sup>43</sup> argue that while flexibilization of regulation of healthcare workers' scopes of practice helps increase the number of available workers during the pandemic, it raises safety concerns about the provision of care by allowing less-experienced workers to perform tasks under minimal supervision. However, studies show that experiences with the expansion of healthcare workers' scopes of practice improve access and quality of care, besides helping to reduce health costs <sup>9,10,11</sup>.

### **Task-shifting**

The redistribution of activities within the health workforce, or task-shifting, is one of the strategies endorsed by the WHO to expand healthcare provision by optimizing health workforce use <sup>44</sup>. Sufficient evidence exists to show that task-shifting is an important strategy to relieve shortages and to increase efficiency and productivity in health services provision with quality and low cost <sup>45</sup>. This strategy has been adopted <sup>46</sup> and recommended globally during the COVID-19 pandemic <sup>20,26,47,48</sup>.

Outdated policies are the main culprits in restricting task-shifting among healthcare workers<sup>20</sup>. Although task-shifting usually involves transferring roles and activities from a more highly qualified professional category to a less qualified one, it can also occur between two professions from the same level<sup>44</sup>. While the frontline health workforce in COVID-19 becomes scarce, the dental workforce is largely available, with services and private offices closed, potentially becoming a great ally for increasing the health workforce capacity<sup>47,48</sup>. Sacoor et al.<sup>47</sup> found similarities between the medical and dentistry undergraduate curricula and that dentistry teams have the clinical and administrative skills acquired during undergraduate and graduate training that can be tapped into during the pandemic. According to Bourgault et al.<sup>46</sup>, members of the dentistry team, particularly dental surgeons and those with sedative skills, were reallocated to work in the United Kingdom's National Health System (NHS). The article further cites examples of task-shifting between physicians and physical therapists, as in Australia, where physical therapists took over roles in the acute ventilation team. The Canadian Association of Physician Assistants has recommended increasing transferrable tasks from the physician supervisor's scope to the physician assistant to increase health workforce capacity<sup>26</sup>.

### **Telemedicine**

Telemedicine has gained a growing and global leading role during the pandemic as a strategy to increase health workforce capacity in parallel with the reduction in patients' and healthcare workers' exposure to the virus. Many health organizations and systems are recommending<sup>19,25,49,50</sup> and adopting<sup>2,31,32,51</sup> new ways to flexibilize the health workforce through the use of telemedicine during the pandemic.

Measures to reduce regulatory barriers on scopes of practice in the United States feature changes for the expansion of telemedicine provision, including reimbursement by Medicare and Medicaid (healthcare programs for low-income individuals and people 65 or older, respectively), for care via telemedicine by healthcare workers<sup>2,51</sup>. In the Netherlands and the United Kingdom, pharmacists have also expanded their practices through remote consultation via telemedicine<sup>32</sup>. In China, the establishment of telemedicine facilities in hospitals gave pharmacists a new opportunity for health services' provision, besides reducing patients' need to go to the hospital<sup>31</sup>.

Since each state in the United States has the authority to set regulations for practice by its healthcare workers, Frogner et al.<sup>25</sup> contend that rules for the provision of telemedicine services should be standardized at the federal level, allowing providers to serve patients beyond state borders. According to Pritchard et al.<sup>49</sup>, the pandemic raised the urgent need in the country to implement telemedicine services in areas where such services were still limited. However, the article warns that pharmacists are not among the workers authorized by Medicaid and Medicare to provide services via telemedicine with regular reimbursement, as happened for example with some APN, PAs, and physical therapists. The authors contend that pharmacists are key workers in the provision of care via telemedicine during the pandemic and that they should be included in the reimbursement systems for this type of practice. Thiessen et al.<sup>19</sup> also highlight how pharmacists have contributed both to in-person care and telecare during the pandemic and should thus be reimbursed for the provision of remote care like other professions.

Meanwhile, Watkins & Neubrander<sup>50</sup> note that the federal legislation that removed obstacles to the provision of care and reimbursement via telemedicine for healthcare workers failed to include one of the categories of APN, namely registered nurses. These are highly knowledgeable and clinically highly skilled workers whose professional role is widely acknowledged, mainly in primary care and coordination of chronic patient management, which would require including them among the workers eligible for reimbursement via telemedicine, thereby relieving health workforce shortages.

The use of telemedicine can thus help reduce the demand for routine care, allowing for remote consultations between healthcare workers and COVID-19 patients. The tool can also facilitate the exchange of experiences between workers and offer training and capacity-building.



### **Licensing and recruitment of inactive workers**

Among the measures for regulatory flexibilization to expand the health workforce, the recruitment and licensing of inactive healthcare workers (retirees, recent graduates, undergraduate students in health fields, and workers trained abroad) have been adopted <sup>2,15,20,29,30,34,43,46</sup> and recommended <sup>20,52</sup>. The expectation is to reinforce health systems when the current health workforce is (or will soon become) overburdened and scarce.

Retired volunteers have been recruited in various countries such as the United States, Spain, United Kingdom, and Ireland, seeking to streamline and flexibilize the relicensing or recertification of workers, especially physicians and nurses <sup>2,15,34,43</sup> and pharmacists <sup>29</sup>. However, the strategy has raised concerns. Although it expands the immediate workforce capacity, it is limited by the high case-fatality of the novel coronavirus in the elderly, who represent a major share of retirees <sup>15,34,43</sup>. It is thus recommended that workers over 60 years of age who return to work should avoid frontline care <sup>43</sup>.

The acceleration of licensing of recent graduates for exercising healthcare practice <sup>30</sup> and the incorporation of students, especially medical and nursing undergraduates, has anticipated their professional practice <sup>2,15,20,34,46</sup>. A simple option to expand the health workforce is to help students in their final year of undergraduate training to initiate their professional practices. Medical students in advanced stages of training can perform various activities and tasks such as triage, data collection, and administrative activities, freeing physicians for direct COVID-19 patient care <sup>20</sup>. Italy launched the adoption of this strategy, allowing physicians-in-training to initiate their practice nine months before graduation <sup>15</sup>. Bourgeault et al. <sup>46</sup> and Iserson <sup>34</sup> cite Germany, Netherlands, Jamaica, and the United Kingdom as countries that have recruited medical students to work during the pandemic. Bourgeault et al. <sup>46</sup> also cite the example of Australia, where nursing students were employed to assist nurses, freeing the latter to focus on critical cases. However, it is also necessary to consider that students need supervision and support, since they are still not fully trained; besides, as they join the health workforce, they should have the free choice to work and to be paid for the work they perform <sup>46</sup>.

According to Bayne et al. <sup>15</sup>, numerous military personnel in the United States are trained in medical procedures but cannot practice medicine because of licensing laws. Through flexibilization of regulatory measures, they could be authorized to practice, thereby relieving the overburdened health workforce.

The reintegration of workers trained abroad is another strategy to expand the health workforce <sup>34,46</sup>. In the United States, many physicians that came from other countries to do their residency are trained and experienced to act on the frontline in COVID-19. There is thus pressure for the immigration authorities to extend the work visas for these physicians <sup>34</sup>. Bourgeault et al. <sup>46</sup> cite the example of the United Kingdom, which has accelerated its registration process for nurses trained abroad.

Healthcare workers are also recruited from other countries <sup>46</sup>. This practice is acknowledged worldwide for dealing with workforce shortages. Canada issued a call for nurses and physicians trained abroad to work in indigenous communities through temporary emergency work authorizations <sup>46</sup>. Cuba has sent physicians around the world for decades, including to Brazil from 2013 to 2018. The situation is no different in the current pandemic, with hundreds of Cuban physicians and nurses engaged in the fight against the novel coronavirus in various countries <sup>53</sup>.

### **Recruitment of workers from other regions**

Both in the United States and Canada, regulation of healthcare professions is primarily the states' responsibility. Healthcare workers registered in one state are not authorized to perform their activities in another. Given the shortage of workers with the rise in COVID-19 cases, some US states <sup>2,15,34,40,46</sup> and Canadian provinces <sup>46</sup> seek to increase their health workforce capacity by adopting regulatory changes to flexibilize the rules for practice outside the state or provincial borders, allowing mobility for work in different states/provinces. The urgency of facilitating this mobilization led to different measures, varying between sites and types of workers authorized, from emergency and temporary licensing to the total exemption from licensing requirements <sup>40,46</sup>.

The provision of interstate licenses in the United States included physicians, pharmacists, PAs, paramedics, nurses, and physical therapists, so long as they were willing to participate in

COVID-19-related care<sup>43</sup>. According to Levisohn & Higgins<sup>43</sup>, flexibilization of restrictions for providers to practice without a specific state license called attention to the degree to which state licensing requirements for physicians in the United States are generally stricter and more outdated than for other professions.

According to Bayne et al.<sup>15</sup>, granting temporary licenses for practice outside the state in the United States is only a moderately effective strategy. The positive point is that this type of reform facilitates health workforce mobility to meet demands in places facing greater difficulties with shortage. However, it may be less beneficial in case an epidemic is not limited to local outbreaks in certain regions. *“If the entire country faces a shortage of healthcare professionals, the effectiveness of this reform may be reduced”*<sup>15</sup> (p. 5). Meanwhile, Chen et al.<sup>2</sup> argue that states are expected to suffer peak demand at different times, so the mobility would not harm one place versus another. Levisohn & Higgins<sup>43</sup> raise the concern that as workers react to the crisis and move to places with greater need, especially large cities, they may exacerbate the shortage of medical care in rural and remote areas of the country.

Importantly, permissions to practice in different states may also be extended to include remote services such as telemedicine. Emergency licenses have been granted, for example, for APN to provide care via telemedicine without meeting state requirements<sup>43</sup>.

### **Training and capacity-building**

The review included documents on approaches related to formal training<sup>21,54</sup> and the supply of training during the COVID-19 pandemic<sup>2,20,22,27,46,55</sup>. The need for changes in undergraduate and graduate training of physicians for them to be capable of adapting their practices rapidly was recommended in an article by Vijayarathi & Khosa<sup>54</sup>. The authors raise the concern that “ultra” subspecialized training of physicians may narrow their range of knowledge, limiting the scope to their subspecialty, as radiologists, who are often unable to interpret an image outside their subspecialty. While the current pandemic overburdens thoracic radiologists, other radiologists may have part of their workload idle and could thus be utilized better. The authors recommend that to maintain versatility, cross-training with other subspecialties is necessary, allowing them to cover colleagues in time of need. Likewise, Fernandes et al.<sup>21</sup> emphasize that future medical training should place greater emphasis on generalist skills, based on “dual training” with general internal medicine, allowing physicians to adapt faster to situations like COVID-19.

The importance of the training supply, especially considering the strategies discussed above such as the expansion of the scope of practice, task-shifting, and recruitment of inactive workers, also emerged in the documents. Bourgeault et al.<sup>46</sup> argued that the adoption of task-shifting may require additional qualification, citing an experience in Canada where training was offered to APN to manage ventilators during shortages of the attending professional. According to Bhatnagar et al.<sup>55</sup>, anesthesiologists, who deal directly with airways, ventilator management, and intensive care, are on the vanguard of treatment for COVID-19 patients; however, the number of these professionals may be insufficient to meet the demand, thus requiring training of physicians from other specialties to manage ventilation and intensive care.

Boehronger et al.<sup>22</sup> recommended training paramedics to manage ventilators safely both during patient transport and inside healthcare establishments. Fraher et al.<sup>20</sup> propose that professionals whose offices are closed or who experience low demand during COVID-19, such as dentistry teams (dentists, hygienists, technicians), optometrists, chiropractors, and audiometry technicians can be trained through short online courses to take on such roles as performing tests, reading vital signs, providing telephone follow-up for persons in quarantine for COVID, and collecting epidemiological data, for example. The supply of training to inactive workers such as retirees was also recommended by Fraher et al.<sup>20</sup> and Chen et al.<sup>2</sup>.

Although it was not the specific aim of the current review, it is important to cite some strategies that have also been adopted and recommended to greater or lesser degrees in Brazil. Concerning the expansion of scopes of practice and task-shifting, the Brazilian model of professional regulation, based on acts exclusive to certain professions, is hardly flexible, leaving little room for shared and/or multidisciplinary work<sup>9</sup>. However, since COVID-19, in some cases, healthcare workers have shifted to roles outside their usual scope. One example is dental surgeons from the public sector who were

shifted to perform administrative activities, telemonitoring of users with suspected or confirmed cases of the novel coronavirus, application of tests, and reading COVID-19 diagnostic results <sup>56</sup>.

In Brazil's PHC, the family health teams, which are characteristically multidisciplinary, have had positive impacts on the population's health, playing an important role in confronting the pandemic <sup>6,8</sup>. However, the largely inflexible model of professional regulation, with certain professions controlling acts that could otherwise be shared, both between professionals with higher qualifications and between technical level professionals, may limit the adaptation of these teams to act during health crises. Reforms that prioritize models for services provided with greater task-sharing, favoring multidisciplinary work at different levels of care, should be encouraged to ensure greater equity in access to health services during health crises <sup>9</sup>.

As regards authorization for care via telemedicine in Brazil, *Law n. 13,989/2020* <sup>57</sup> was passed, authorizing its use during the COVID-19 crisis. Following the law, some professional associations have published memoranda, resolutions, and/or rulings on the use of telemedicine, such as the CFM <sup>58</sup>, the Brazilian Federal Council of Dentistry (CFO) <sup>59</sup>, and the COFEN <sup>60</sup>. In PHC, teleconsultation is recommended for use by different professionals, not only for confirmed COVID-19 cases but also for follow-up of chronic patients and priority groups <sup>6,8</sup>.

To expand the health workforce, rulings were published that encourage recruitment of workers from one state of Brazil to another, based on training and registration of healthcare workers for confronting the pandemic <sup>61</sup>. Foreign physicians, specially cubans, were also recruited in the last year through an emergency call issued by the Brazilian Ministry of Health <sup>62</sup>. Brazil suffers from chronic shortage and poor distribution of healthcare professionals, especially physicians <sup>63</sup>. Even with a significant increase resulting from policies implemented in the last two decades, in 2020 the availability of physicians was still insufficient to deal with a health crisis such as COVID-19 <sup>64</sup>. According to Leite et al. <sup>65</sup>, the few rulings and calls for physicians issued during the pandemic have been insufficient to supply physicians and to meet the heavy demand by services.

As for training, exceptional educational standards were established by *Law n. 14,040/2020* <sup>66</sup>, which allows, during the state of public calamity, that undergraduate university and technical students in their final year of training anticipate their conclusion so long as they have completed 75% of their practical course load. Leite et al. <sup>65</sup> identify a weakness in this legislation, namely the failure to require a contract between the student, service, and teaching institution. In addition, there is no assessment of the compatibility between the activities performed and those established in the undergraduate curricula, leading professional associations to discourage students from working during the pandemic. The article also points to the lack of federal guidelines on the supply of training to healthcare workers during the pandemic. Online courses for healthcare workers promoted by institutions and projects maintained by the Brazilian Ministry of Health have suffered from a lack of support and publicity from the Federal Government. According to the authors, there has been a lack of coordination of federal policies for health workforce governance to deal with the pandemic in Brazil <sup>65</sup>.

Despite the attempt to make this review as comprehensive as possible, it may not have identified all the publications on the topic, since it was limited to three databases. The consultation in the gray literature was also limited, since it was an international review, without specifying countries. In turn, this situation hindered the consultation of websites of organizations and research bodies in each country, which might have yielded other documents on the topic. Due to the rapid changes in the context of the pandemic, some previously cited strategies may have changed.

## Conclusion

The current scoping review aimed to identify and summarize the principal international strategies related to measures for flexibilization of regulations on healthcare workers' practices that have been implemented and/or recommended during the COVID-19 pandemic. The review identified documents that reveal six main strategies in some countries, including the expansion of scopes of practice; task-shifting; telemedicine; licensing and recruitment of inactive workers; recruitment of workers from other regions; and training.

Many countries and healthcare organizations are testing new ways to free up the health workforce potential. In some parts of the world, healthcare workers' practices have occurred outside of their comfort zone and traditional scope. Perhaps one of the most important strategies in response to workforce shortages and overburdened workers due to the COVID-19 pandemic has been the flexibilization and willingness to adapt, expand, and shift healthcare workers' activities and roles to deal with the needs and rapid changes.

The pandemic thus launched a new age for various workers as the regulatory changes and emergency policies expanded their scope, even if temporarily. A professional struggle is now necessary for the changes that have been adopted to become permanent. Workers from different areas have diverse skills and experiences that can and should be utilized during health crises. The supply of training for the health workforce can be a major ally, allowing workers to rapidly improve and acquire new skills.

The extent to which these strategies have been adopted varies between countries, sites, and professional categories. Many documents in this review deal with recommendations and not adopted strategies. However, it is important to recall that there are different ways and means, some more and others less effective, to attempt to strengthen the health workforce capacity.

This review exposes health systems' weaknesses and reminds us how essential the health workforce is, in sufficient quantity and with the necessary skills to meet the population's needs quickly and effectively. The review suggests that the more flexible the regulations on healthcare workers' scopes of practice, the more agile their adaptation to deal with moments of crisis. For Brazil to adapt its health workforce to deal more readily with emergencies, it is thus important to discuss reforms in the regulation of scopes of practice. Future studies should delve deeper into strategies that have been adopted and recommended in Brazil, attempting to identify not only the applicability of these strategies to emergencies such as the current pandemic but also ways to optimize the existing health workforce to meet the population's ongoing demand for access to health.

## Contributors

A. C. van Stralen contributed to the study conception and design, data collection, interpretation and analysis, and writing. C. L. Carvalho and S. N. Girardi reviewed the manuscript. A. W. Massote contributed to the data interpretation and analysis. M. L. Cherchiglia contributed to the study conception and design and reviewed the manuscript. All authors approved the final version of the manuscript.

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## Resumo

A COVID-19 foi classificada como pandemia pela Organização Mundial da Saúde (OMS) em 11 de março de 2020. Diante da sua acelerada propagação, governantes, comunidades e serviços de saúde estão tendo que agir na mesma velocidade para ampliar a capacidade da força de trabalho em saúde. Este estudo objetivou, a partir do método revisão de escopo [scoping review], identificar as principais estratégias relacionadas a medidas de flexibilização de regulações que regem as práticas de profissionais de saúde que vêm sendo adotadas e/ou recomendadas internacionalmente. O estudo seguiu as etapas propostas pelo Instituto Joanna Briggs. Para a construção da questão de pesquisa, utilizou-se o método PCC (população, conceito e contexto). A busca se baseou nas seguintes bases de dados: PubMed, Scopus e Base de Dados da OMS; e na literatura cinzenta. Foram identificados 36 documentos, classificados nas seguintes estratégias: (1) ampliação de escopo de prática; (2) transferência de funções de uma categoria profissional para outra; (3) autorização para atendimento e faturamento via telemedicina; (4) licenciamento e recrutamento de profissionais não ativos; (5) recrutamento de profissionais de outras regiões/estado; (6) mudanças na formação e oferta de treinamento. Uma das estratégias mais importantes em resposta a situações de escassez de profissionais de saúde tem sido e a disponibilidade para adaptar, ampliar e redistribuir as atividades dos profissionais, de modo a atender as rápidas mudanças. Esta revisão reflete a importância em se realizarem reformas nas regulações profissionais de forma a otimizar a força de trabalho em saúde existente para que esta possa atender às demandas constantes de necessidade da população.

COVID-19; Pandemias; Mão de Obra em Saúde; Competência Profissional

## Resumen

La COVID-19 fue clasificada como pandemia por la Organización Mundial de la Salud (OMS) el 11 de marzo de 2020. Ante su acelerada propagación, gobernantes, comunidades y servicios de salud están teniendo que actuar a la misma velocidad para ampliar la capacidad de la fuerza de trabajo en salud. Este estudio tuvo como objetivo, a partir del método revisión de alcance, identificar las principales estrategias relacionadas con medidas de flexibilización de regulaciones que rigen las prácticas de profesionales de salud que vienen siendo adoptadas y/o recomendadas internacionalmente. El estudio siguió las etapas propuestas por parte del Instituto Joanna Briggs. Para la construcción de la cuestión de investigación, se utilizó el método PCC (población, concepto y contexto). La búsqueda se basó en las siguientes bases de datos: PubMed, Scopus, Base de Datos de la OMS; y en la literatura gris. Se identificaron 36 documentos, clasificados en las siguientes estrategias: (1) ampliación de ámbito de práctica; (2) transferencia de funciones de una categoría profesional a otra; (3) autorización para atención y facturación vía telemedicina; (4) permisos y reclutamiento de profesionales no activos; (5) reclutamiento de profesionales de otras regiones/estado; (6) cambios en la formación y oferta de entrenamiento. Una de las estrategias más importantes en respuesta a situaciones de escasez de profesionales de salud ha sido la disponibilidad para adaptar, ampliar y redistribuir las actividades de los profesionales, de modo que atienda a cambios rápidos. Esta revisión refleja la importancia de que se realicen reformas en las regulaciones profesionales, de forma que se optimice la fuerza de trabajo en salud existente para que esta pueda atender a las demandas de necesidades constantes de la población.

COVID-19; Pandemias; Fuerza Laboral en Salud; Competencia Profesional

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