Community pharmacy at a glance 2021

Regulation, scope of practice, remuneration, and distribution of medicines through community pharmacy premises and other outlets

2021
Colophon

Copyright 2021 International Pharmaceutical Federation (FIP)

International Pharmaceutical Federation (FIP)
Andries Bickerweg 5
2517 JP The Hague
The Netherlands
www.fip.org

This report is meant for restricted distribution to FIP member organisations. Data and extracts from it may be used, but the entire publication or entire chapters thereof should not be circulated or made available to third parties in electronic or printed formats.

All rights reserved. No part of this publication may be stored in any retrieval system or transcribed by any form or means – electronic, mechanical, recording, or otherwise without citation of the source. FIP shall not be held liable for any damages incurred resulting from the use of any data and information from this report. All measures have been taken to ensure accuracy of the data and information presented in this report.

Authors:
Rüben Viegas, FIP Practice Development Projects Coordinator
Martha Poe, Virginia Commonwealth University, USA
Gonçalo Sousa Pinto, FIP Lead for Practice Development and Transformation

Editor and coordinator:
Gonçalo Sousa Pinto, FIP Lead for Practice Development and Transformation

Reviewers:
Jaime Acosta Gómez, FIP Community Pharmacy Section (Spain)
Daragh Connolly, Vice President, FIP Community Pharmacy Section (Ireland)
Manjiri Gharat, FIP Vice President (India)
Lars-Åke Söderlund, President, FIP Community Pharmacy Section (Sweden)
Sari Westermarck, FIP Community Pharmacy Section (Finland)

Recommended citation:

Cover image:
© Smart Design | iStockphotos.com
# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgements</td>
<td>2</td>
</tr>
<tr>
<td>World Health Organization regions</td>
<td>3</td>
</tr>
<tr>
<td>1 Community pharmacy at a glance 2022—Study summary and key findings</td>
<td>4</td>
</tr>
<tr>
<td>2 Infographics of key indicators</td>
<td>11</td>
</tr>
</tbody>
</table>
Acknowledgements

The content of this report has been produced independently by the authors and editors.

This study was supported by unrestricted funds by Sanofi Consumer Healthcare.
## World Health Organization regions

<table>
<thead>
<tr>
<th>Region</th>
<th>Abbreviation*</th>
</tr>
</thead>
<tbody>
<tr>
<td>African region</td>
<td>AFRO</td>
</tr>
<tr>
<td>Eastern Mediterranean region</td>
<td>EMRO</td>
</tr>
<tr>
<td>European region</td>
<td>EURO</td>
</tr>
<tr>
<td>Pan-American region / Americas</td>
<td>PARO</td>
</tr>
<tr>
<td>South-East Asian regional</td>
<td>SEARO</td>
</tr>
<tr>
<td>Western Pacific region</td>
<td>WPRO</td>
</tr>
</tbody>
</table>

* In the infographics included in this publication, the World Health Organization’s regions are referred to through the acronyms of the WHO Regional Offices they represent, not as an actual reference to the Regional Offices.
1 Community pharmacy at a glance 2021 — Study summary and key findings

The global community pharmacy landscape is in constant evolution. Contributing factors include:

- The changing needs of both healthcare systems and patients;
- The impact of the COVID-19 pandemic;
- The need for a rapid response and adaptation;
- Trends in self-care;
- The emergence of new technologies and digital players;
- Trends in regulatory models;
- Innovation in professional services and remuneration models; and
- The increasing role that community pharmacies play in primary health care.

All factors impact the goal of universal health coverage and make community pharmacy a vital and dynamic sector of our profession and society in general.

FIP's vision is a world where everyone benefits from access to safe, effective, quality and affordable medicines and health technologies, as well as from pharmaceutical care services provided by pharmacists, in collaboration with other healthcare professionals. FIP's mission statement to support global health by enabling the advancement of pharmaceutical practice, sciences and education requires that it monitors and analyses changes and trends in pharmacy regulatory and practice models. For this reason, FIP conducts periodical global surveys of its member organisations to investigate how the profession is practised, regulated and remunerated, what the global pharmacy workforce is, and how medicines are distributed to patients. This updates the data and intelligence FIP holds about the challenges and opportunities that different countries and territories are facing, while providing evidence to inform policymaking and support value-driven propositions to improve health outcomes through pharmacy.

The 2020 survey was conducted between November 2020 and January 2021, with organisations from 118 countries and territories invited to participate. Responses were obtained from 79 countries and territories (response rate of 67%). Comparisons of data were undertaken when data were available for countries that participated in both surveys (56). This is important, as it is the subset of respondents in which comparative analyses can be made.

It should be noted that the Chinese Pharmaceutical Association (CPA) found that the survey questionnaire did not allow for adequate description of the Chinese community pharmacy sector and declined to participate in the survey. Instead, FIP invited the CPA to submit a narrative case study. This relevant example serves to showcase the specific elements related to the distribution of medicines in the community or ambulatory setting, and the regulation of community pharmacy in China.

**Global community pharmacy workforce**

In 2018, FIP published its Pharmacy Workforce Intelligence: Global Trends Report. This landmark publication provided extensive intelligence on global capacity trends observed in the pharmaceutical workforce from 2006 to 2016 and tracking global and national trends, including gender distribution and capacity growth mapped to regional variation and country-level economic indicators.

The 2020 survey, the findings of which are presented here, collected essential workforce data with a particular focus on the community pharmacy workforce. In this report, data for selected indicators are compared with the findings for the same indicators in the subset of respondents that participated in both this and the previous survey in 2016. This is meant to provide a snapshot of the evolution of workforce data between these two data points. It may be useful to consider 2020 data in relation to the trends described in 2018 report, but that analysis is outside the scope of the present report.
While this report focuses on community pharmacy, the findings pertaining to the community pharmacy workforce will be collated in subsequent trends reports and workforce reviews. We will consider the 2020 data in relation to the trends described in 2018 report in subsequent reports.

Here, a total of 72 countries and territories reported a total of 3,489,559 pharmacists across all areas of practice. The density of actively practising pharmacists per 10,000 people of a country’s population provides a standardised measure of the availability of pharmacists for healthcare systems. This measure is frequently used by the World Health Organization (WHO) and other organisations.

The study sample identified a mean of 8.54 pharmacists per 10,000 population. Analysing the mean number per 10,000 population by WHO region, we found that the mean density in the Eastern Mediterranean region was more than double the global average. This is largely due to the density of pharmacists in Egypt, which is among the highest in the world. It would be useful to identify how the workforce is deployed to further identify the relationship between capacity/density and utility. Within the subset of 41 countries and territories that participated in the 2016 and 2020 surveys (where a comparative analysis is possible), the density of pharmacists per 10,000 population increased from 8.02 to 8.70 (an 8.5% increase).

By contrast, the mean density observed in the African region was well below the sample mean, suggesting a long known insufficient capacity in pharmacist workforce to meet the needs of healthcare systems and society in that region. When considered in relation to income levels, the differences in workforce capacity are evident. With only 0.19 pharmacists per 10,000 population, low-income countries have a pharmacist density that is more than 60 times lower than that of high-income countries. This may lead to poor access to pharmaceutical care in this group of countries, which may require workforce planning policies to address this challenge. See Infographic 1 below for details.

A total of 1,869,570 pharmacists (full-time equivalents) are actively working in community pharmacy in the 70 countries and territories that provided data on this indicator. The mean density of active community pharmacists per 10,000 population in the study sample stands at 5.14. For the countries and territories that provided data for this indicator in 2016 and 2020 (n=42), the average density of community pharmacists increased from 4.63 to 5.19 pharmacists per 10,000 population (12.1% increase). There are important differences in this indicator across WHO regions: the density of pharmacists in the European region (7.23) is more than seven times higher than that of the African region (0.95). Also, the average density for high-income countries and territories (6.66) is almost three times higher than that for low-income countries (2.29), which has a direct impact on access to the professional services of community pharmacists by the population and in ensuring responsible use of medicines. See Infographic 2 for details.

Seventy-six countries and territories reported a total number of 1,609,734 community pharmacies (including branches supervised by a pharmacist but excluding mail-order only pharmacies). This results in an average density of pharmacies per 10,000 population of 2.75. The variation in this indicator for the countries and territories that replied to both surveys and provided these data (n=50), show an increase of 11.2% between the two time points, from 2.50 to 2.78. The African region has a lower density (0.95) compared with all the other regions, which are closer to the sample mean. On the same note, low-income countries have the lowest density, with less than one pharmacy per 10,000 population. Both these figures suggest low access to pharmacies in these countries, which can translate into difficulties in having timely access to medicines and the professional services of pharmacists and the primary healthcare services that pharmacies offer in other parts of the world. Egypt, Mongolia and India, despite being lower-middle income countries, have the highest densities of community pharmacies per 10,000 population in the study sample. See Infographic 3 for details.

The average population served by a pharmacy provides an indication of a country’s community pharmacy capacity, as well as the accessibility of pharmacy services and, by extrapolation, access to medicines. At global level, the mean stands at 8,940 inhabitants per pharmacy for the 77 respondent countries and territories. The average population per pharmacy in the African region is much higher than in the other regions, reporting more than twice the sample average. On the same note, low-income countries have an average of nearly 27,000 inhabitants per pharmacy, which is quadruple the figure for high-income countries. Combining high populations to serve per pharmacy with the low figures in terms of community pharmacist density in this group of countries, it is clear that such scarce infrastructures and workforce capacity cannot fully meet the needs of the populations. It is also challenging to diversify the scope of professional services since the few available workforce resources must focus on the most fundamental roles of the profession.
The ratio of community pharmacists per community pharmacy offers a measure of the capacity to deliver patient care and pharmaceutical services, and establishes a clear line of division for countries and territories where the availability of pharmacists is lower than that of community pharmacies and their populations. The average ratio in the study sample is 1.88 pharmacists per pharmacy.

When considering this indicator across WHO regions, the African region is the one with the lowest density of pharmacists per community pharmacy (0.86), followed by the South-East Asian region (0.98). Both these regions have a ratio below one, which indicates that some community pharmacies are operating without a pharmacist, or that a pharmacist may be working across more than one pharmacy. This, in turn might compromise access to pharmaceutical care and other pharmaceutical services that are available in other parts of the world, or the pharmacist-supervised dispensing of medicines. Analysing this indicator per income level, the average number of community pharmacists per pharmacy in low-income countries (0.40) is nearly six times lower than the ratio in high-income countries (2.38).

Comparing the ratios of community pharmacists per community pharmacy from 2016 to 2020, there has been an 8.67% increase in the sample average for the countries in both surveys, from 1.73 to 1.88. However, an increase in this indicator is only seen in the European region and in the high- and middle-income countries. Not only is the decrease in this ratio in all but one region of great concern, but it also suggests an uneven evolution in terms of workforce capacity per pharmacy around the world.

The average density of community pharmacy support personnel per 10,000 population in the study sample is 5.75. Definitions of pharmacy support workforce greatly differ across countries and territories, and so do their training, competency profile and scope of practice. In terms of WHO regions, the Americas region has the highest density of pharmacy support personnel per 10,000 population (8.35) compared with the African region, which has the lowest density, with 2.70 pharmacy support personnel per 10,000 population — around half compared with the sample mean. As for income levels, high-income countries and territories have the highest density at 6.89 pharmacy support personnel per 10,000 population, and low-income countries have the lowest at 2.20.

Ownership of community pharmacies

The ownership regulation of community pharmacies differs greatly across the countries and territories that responded to the survey. The most common type of ownership is either by individual pharmacists or partnerships with a shareholder majority of pharmacists, present in 86% of countries and territories. The second most common is corporate ownership of pharmacy chains, in 57 of the 79 responding countries and territories (72%). A wide range of ownership types exists but are present in fewer jurisdictions. See Infographic 4 for details.

From the 79 respondents, in 71% of the jurisdictions ownership of pharmacies was not restricted to pharmacists. Therefore, the management and ultimate decision-making in a pharmacy is led by the professional judgement and ethics of the registered pharmacist in only 29% of the countries and territories.

Among the 56 jurisdictions where pharmacy ownership is not restricted to pharmacists, some apply certain legal exclusions as to who may own a community pharmacy to avoid perceived conflicts of interest or vertical integration models. Vertical integration is the combined ownership by the same individual owner or corporation of operations at different levels of the medicines supply chain, such as community pharmacies and wholesale companies or pharmaceutical manufacturers. The most common exclusion are medical doctors and other prescribers (53%), pharmaceutical wholesalers (37%) and pharmaceutical manufacturers (38%).

Out of 76 respondents, 25 (33%) reported that limitations to horizontal integration exist in their jurisdiction. Horizontal integration is defined as the process of a company increasing production of goods or services at the same level of the supply chain. In the case of community pharmacies, horizontal integration refers to the ownership of multiple pharmacies by the same individual or corporation, as is the case with chains. In some jurisdictions, the ownership of multiple pharmacies is allowed, but limits apply to prevent situations of market control.
Establishment, distribution and functional requirements of community pharmacies

The establishment and territorial distribution of community pharmacies constitute key elements in the definition of national medicines policies that guarantee equitable and continuous access to medicines and associated services by the population. In models where the establishment and distribution of community pharmacies is regulated, jurisdictions consider that the application of restrictions to free establishment policies is benefited by regulation. The establishment of new pharmacies is generally determined by public administrations through the application of demographic or geographic criteria, following a rationale of ensuring timely access to medicines to all persons and a functional and sustainable network of pharmacies.

Out of the countries and territories with planned models, nine apply regulations that are based on geographic criteria only for authorising the opening of a new pharmacy. Conversely, five countries reported that only demographic criteria are used when issuing a new pharmacy licence. A larger group of 23 countries and territories (29% of total) use a combination of geographic and demographic criteria, where, in addition to a minimum distance to the nearest existing pharmacy, a minimum population (or population increase) in a given area is used to determine the need to issue a new pharmacy licence. There are 20 countries or territories (25%) that use other types of criteria for regulating the establishment of new pharmacies, and in 22 responding countries (28%) there are no criteria (the establishment of new community pharmacies is unplanned). See Infographic 4 for details.

Since the last data collection cycle, the number of countries that do not apply any such regulations (i.e., where the establishment of new pharmacies is free) decreased from 49% to 27% (from 27 to 15 countries) within the subset of 55 countries and territories that responded to both surveys. This seems to suggest a trend towards a higher level of regulation in the establishment of new pharmacies at international level.

Some jurisdictions that apply planned distribution systems for community pharmacies may establish incentives to pharmacies in scarcely populated areas, where the location may be important from a public service point of view but may compromise the pharmacy’s economic viability if not subsidised by public funds. Out of the 78 countries and territories that replied to this question, 12 (15%) indicated the existence of such incentives or compensations.

Some functional areas in a community pharmacy may be associated with the provision of certain services or pharmaceutical care. As such, the regulatory requirement for certain spaces within community pharmacies is linked to the type of services that pharmacies are expected or required to provide to the community. Rooms for a private consultation between the patient and a pharmacist are a legal requirement in 23 countries and territories (30.7% of 75 respondents). Compounding areas were reported as important to meet those needs that cannot be covered by industrially produced medicines In 46 out of 74 countries and territories (62%), a compounding area is a legal requirement.

Sixty-six respondents (84%) reported that community pharmacies are required to have a pharmacist in charge, often known as the managing pharmacist, responsible pharmacist or technical director. Sixteen countries and territories (20.3%) reported having legal requirements for additional pharmacists in the staff of community pharmacies in certain circumstances. Thirteen countries and territories (16.5%) reported having legal requirements for pharmacy technicians or other pharmacy support workforce in the staff of community pharmacies.

Regarding the existence of standard evaluations or inspections of community pharmacies by a governmental agency using standard indicators, such quality assurance systems are in place in 65 of 78 respondents (83%).

Scope of practice of community pharmacists

This survey also investigated the scope of regulated services and activities by pharmacists, i.e., whether the services included in the survey are allowed by law in each jurisdiction. This question was different from that included in previous surveys, which asked about the services that are available in each country and the approximate percentage of pharmacies that offered them. This proved to be challenging to express in objective data, which is why this year’s question focused on the legal possibility of offering these services (regulated scope of practice). As such, comparisons with the findings from previous surveys are not possible.

Four categories of services and activities reported in this survey, included:
1. Services involving clinical decision-making for treatment initiation, continuation, or modification;
2. Providing medicines and pharmaceutical care beyond the pharmacy premises;
3. Disease screening and

It should be noted that vaccination services were not included in this year’s survey because FIP had conducted a specific survey about the role of pharmacists in vaccination within the same calendar year. Selected findings from that survey are included in this report for convenience, but more details can be found in the report — “An overview of pharmacy’s impact on immunisation coverage. A global survey” (August 2020).

In the first category of services involving clinical decision making for treatment initiation, continuation or modification, there is a high proportion of countries (60 out of 79 respondents; 76%) that have an important role in dispensing emergency contraceptives. Some countries start to have adjustment of prescriptions (25; 32%), complementary prescribing (16; 20%) or independent prescribing (13; 16%) by pharmacists. These complement the already important role of therapeutic substitution that exists in over a third of the jurisdictions (29; 37%). See Infographic 5 for details.

Another important category of services is the provision of medicines and pharmaceutical care beyond the pharmacy premises. Home delivery services are available in 68% of the countries or territories, while providing medicines and services in care homes (nursing homes) is present in 54% of the countries or territories. On the same note, just over half (52%) of the respondents provide home care and medicines review. Pharmacists providing these services directly to people’s homes can be important for the responsible use of medicines but there is also a social aspect in following up with people that might be lonely or not have appropriate support. These services were also particularly important during the lockdown, isolation or quarantine periods that many people had to experience due to the COVID-19 pandemic, especially older adults with chronic diseases who were advised to stay at home.

Among the category of services focusing on disease screening, the ones that this survey asked about were HIV and COVID-19 tests. Pharmacy-based HIV tests can be performed in 15 countries or territories (19%) while COVID-19 testing received regulatory approval in 14 jurisdictions (18%). Screening for COVID-19 by community pharmacies provided an important contribution to pandemic control strategies in these countries as it provides easy and quick access to a reliable test result that can inform individual decisions and preventive measures and lead to adequate follow-up by health systems. In fact, at the time of publication (July 2021), the number of countries that had introduced pharmacy-based testing for COVID-19 and even achieved third-party remuneration for this service, had increased with regard to the data captured through the survey. The same happened to vaccination services, with countries such as Italy, Lithuania and Poland having introduced this important service.

Finally, pharmacies can provide first aid/immediate care services in 43 countries and territories (54%). This service also consolidates the role of community pharmacies as primary healthcare centres at the hearts of communities.

**Remuneration of community pharmacies**

From a health systems perspective, pharmacy remuneration models need to be cost-effective. For pharmacies, they must also provide adequate remuneration to enable sustainable access to medicines and delivery of comprehensive pharmacy services, including important public health services.

The most commonly remunerated services include compounding of prescription medicines (reported by nine countries), followed by medication review (either in general or for specific diseases or types of treatments and the administration of vaccines (both reported by seven countries). The largest number of services and countries where they are remunerated falls under the cluster of services involving clinical decision-making for treatment initiation, continuation or modification, or for improving the use of medicines. This suggests that the value associated with the expertise of pharmacists and services on medicines and their optimal use are recognised as delivering value for health systems and are remunerated in at least 13 countries and territories. See Infographic 6 for details.
On the 65 respondents that reported the existence of third-party remuneration, 37 (57%) indicated that there was a single third-party payer, while in 28 (43%) countries and territories, pharmacies must deal with multiple payers. While having multiple contractual agreements may lead to greater complexity from a management point of view, it may offer greater flexibility for advocating and achieving remuneration for services from specific payers. Some support tools for pharmacists have to deal with such contractual agreements.

At global level, 37 out of 72 respondents (51.4%) indicated that community pharmacy remuneration is predominantly based on the price of medicinal products, which renders pharmacies more vulnerable to price fluctuations. Eleven countries and territories (15.3%) reported having a remuneration model that is predominantly based on fees for services. A third of respondents (24 countries and territories) indicated that the remuneration of pharmacies is based on other models. While for several countries, this means that there is no third-party remuneration of pharmacies, and the payment for products and services is done by the patient/customer, in some cases (as is the case for Canada and the United States of America), this may mean a balance between the two models exists.

The survey assessed the different components of the remuneration received by pharmacies from third-party payers for the provision of medicines and services, and their respective share of the pharmacy's turnover. Although a lower number of respondents provided these data, 43 respondents provided information on at least one of the remuneration components. Data suggest that a margin-based system linked to the price of reimbursed medicines and products is not only the most common component but also the one that contributes the most to pharmacies' turnover (46% on average). The remuneration component that contributes the least to pharmacies' revenue is the payment of fees for professional services (on average, not more than 4%).

**Dispensing and sales of medicines through community pharmacies and other outlets**

When looking at the regulation of the sales and dispensing of non-prescription medicines (NPMs), three different scenarios may be considered among the study respondents (n=75):

1. Jurisdictions where these medicines are exclusively dispensed by community pharmacies (38.6%);
2. Jurisdictions where NPMs can be sold outside community pharmacies but there is a list of medicines that, albeit not requiring a prescription, can only be dispensed by a pharmacy (34.7%); and
3. Jurisdictions where all NPMs can be bought either at pharmacies or at other establishments (26.7%).

The Americas and Europe regions reported the highest percentages of jurisdictions with at least some form of regulation of NPM distribution, indicating a bigger role of pharmacy professionals in NPM distribution. The African, Eastern Mediterranean and South-East Asian regions reported a higher frequency of NPMs being sold outside the community pharmacy channel with no pharmacy-only list. See Infographic 7 for details.

While NPMs can be obtained outside community pharmacies in more than 60% of the study’s countries and territories, in 73% of the countries and territories the role of pharmacists in promoting the responsible use of NPMs is recognised by regulatory models that require their supervision in dispensing at least some of them. Conversely, 27% of respondents reported no such regulation.

In addition to regulating channels through which NPMs are dispensed, some jurisdictions add a secondary layer of regulation by allowing or disallowing self-selection at community pharmacies. The levels of self-selection were divided into three reported categories:

1. All NPMs are behind the counter and must be requested by the patient (26 out of 75 respondents; 35%);
2. Certain NPMs are behind the counter while others are available for self-selection by the patient (27 respondents; 36%); and
3. All NPMs are available for self-selection (22 respondents; 29%).

The sale of NPMs outside community pharmacies can also be further regulated by limiting self-selection. Models vary in these restrictions: from more restrictive where NPMs cannot be accessed directly by the consumer (7 of 37 respondents; 19%), to far less restrictive, where all NPMs are accessible directly by the
consumer (12; 32%) and the most common model in which the level of access varies based on the type of medicine (18; 49%).

Of the 76 jurisdictions which provided information on prescription-only medicines (POM) distribution at “brick and mortar” establishments, all (76; 100%) reported distribution through community pharmacies. The next most common channel of distribution was dispensing doctors (22 out of 76 respondents; 28.9%).

A total of 71 jurisdictions provided information on the distribution channels through which specialty medicines are available to ambulatory patients. The two most common locations were community pharmacies (64; 90.1%) and hospital outpatient pharmacies (48; 67.6%). Additionally, out of 77 respondents, 71 (92%) indicated that direct delivery of medicines from pharmaceutical wholesalers and manufacturers to patients’ homes is not allowed in their jurisdictions.

Out of 74 respondents, the majority of jurisdictions reported that homeopathic medicines are dispensed through community pharmacies (52; 70%), however, nearly one-third of respondents report homeopathic medicines being dispensed elsewhere (22; 30%). Similarly, the majority of jurisdictions (60; 81%) reported herbal/traditional medicines are dispensed in community pharmacies while approximately one-fifth (14; 19%) reported them being dispensed elsewhere.

Prescribing by international non-proprietary name (INN) promotes evidence-based treatment selection, as well as economic savings for the patient and third-party payers alike. Out of 73 respondents, the majority reported INN prescribing is not mandatory (44; 60.3%) while 27 jurisdictions (37.5%) reported INN prescribing is mandatory. The remaining two jurisdictions (2.7%) reported that it is dependent on the third-party payer. See Infographic 8 for details.

Out of the 47 jurisdictions in which physicians are permitted to prescribe medicines by their brand name, pharmacists are required to dispense a generic alternative in 11 countries and territories (23.4%). Alternatively, pharmacists are not permitted to dispense a generic alternative in six countries and territories (12.8%). In the remaining jurisdictions, generic substitution is voluntary (23; 50%) or is dependent on the third-party payer (7; 14.9%).

In situations where INN prescribing is not mandatory, the ability to substitute for a generic is sometimes granted to pharmacists. However, substitution may still be impeded by either the prescriber or the patient for a number of reasons. Even in situations where generic substitution is mandatory, this can be overruled by the prescriber, the patient or the third-party payer. Out of 79 respondents, 57 (72%) reported the possibility of generic substitution denial by the prescriber, 62 (78%) by the patient, and 25 (32%) by pharmacists.

Governmental regulation of medicine prices has a widespread impact not only on access to medicines and public spending, but also on business models and supply chains. In a global economy where online and travel sale options are becoming increasingly common, it is imperative that pharmacists understand how price regulations relate to free-market principles, consumer autonomy in making healthcare decisions and the sustainability of pharmacy practice models. Out of 75 respondents, 21 (28%) indicated that there is no regulation of prices in their jurisdiction.

The remaining 54 countries and territories are divided into three categories of regulation: only reimbursable medicines are price-regulated (17; 22.7%), all prescription-only medicines are price-regulated (12; 16.0%); and all medicines overall are price regulated (25; 33.3%).
1. Density of pharmacists (all areas of practice) per 10,000 population

Density of pharmacists (all areas of practice) per 10,000 population per region and country income level (n=73)

Evolution of the density of pharmacists (all areas of practice) per 10,000 population, 2016-2020 (in continuous countries and territories across the two surveys; n=41)

*Based on one respondent only (Ghana case)
2. Density of community pharmacists and pharmacies per country

In 74 countries and territories (representing 4.214 billion people, 5.6% of the world’s population) there are

3,489,559
practising pharmacists in all areas of practice

of which

1,869,570
are actively working full-time in community pharmacy.

Density of community pharmacists per 10,000 population

Density of community pharmacies per 10,000 population per country (n=77)
3. Access to community pharmacists and pharmacies per region and income level

77 countries and territories reported a total number of 1,609,734 community pharmacies (including branches supervised by a pharmacist but excluding mail-order-only pharmacies).

Ratio of community pharmacists per pharmacy in 2020, all countries and territories (n=67)

<table>
<thead>
<tr>
<th>Region</th>
<th>Mean per pharmacy</th>
<th>Mean per region</th>
<th>Sample mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFRO</td>
<td>1.68</td>
<td>2.68</td>
<td>2.68</td>
</tr>
<tr>
<td>EURO</td>
<td>3.56</td>
<td>6.23</td>
<td>6.23</td>
</tr>
<tr>
<td>EMRO</td>
<td>3.76</td>
<td>7.33</td>
<td>7.33</td>
</tr>
<tr>
<td>PAHO</td>
<td>3.23</td>
<td>5.46</td>
<td>5.46</td>
</tr>
<tr>
<td>SEARO</td>
<td>3.95</td>
<td>7.23</td>
<td>7.23</td>
</tr>
<tr>
<td>WPRO</td>
<td>2.88</td>
<td>5.11</td>
<td>5.11</td>
</tr>
</tbody>
</table>

Evolution of the ratio of community pharmacists per pharmacy, 2016-2020 (in continuous countries and territories across the two surveys, n=41)

<table>
<thead>
<tr>
<th>Year</th>
<th>Mean per pharmacy</th>
<th>Mean per region</th>
<th>Sample mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>1.88</td>
<td>2.68</td>
<td>2.68</td>
</tr>
<tr>
<td>2016</td>
<td>1.73</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
4. Community pharmacy ownership and establishment models

Distribution of ownership models per country: pharmacist-owned vs. non-pharmacist-owned

Types of community pharmacy ownership (n=79)

- Individual pharmacists or a majority of pharmacists
- Pharmacy chains
- Individual pharmacies not owned by pharmacists
- Hospitals (pharmacies open to the public)
- The state (public ownership)
- NGOs or other non-profit orgs.
- Universities (public or private)
- Other private corporations
- Supermarkets
- Insurance companies
- Private Health Care providers
- Other types of ownership

Establishment and distribution of community pharmacies

<table>
<thead>
<tr>
<th>2020</th>
<th>Geographic criteria only</th>
<th>Geographic + demographic criteria</th>
<th>Demographic criteria only</th>
<th>Other criteria</th>
<th>Unplanned establishment of new pharmacies</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n=79)</td>
<td>9 (11%)</td>
<td>23 (29%)</td>
<td>5 (6%)</td>
<td>20 (25%)</td>
<td>22 (28%)</td>
</tr>
<tr>
<td>Continuous countries (n=54)</td>
<td>5 (6%)</td>
<td>15 (18%)</td>
<td>6 (8%)</td>
<td>15 (19%)</td>
<td>27 (49%)</td>
</tr>
<tr>
<td>2016</td>
<td>5 (6%)</td>
<td>15 (18%)</td>
<td>6 (8%)</td>
<td>15 (19%)</td>
<td></td>
</tr>
<tr>
<td>vs. 2020</td>
<td>6 (12%)</td>
<td>15 (22%)</td>
<td>6 (8%)</td>
<td>15 (19%)</td>
<td></td>
</tr>
</tbody>
</table>

Regulated establishment
5. Services that community pharmacies are allowed to provide beyond dispensing

- Dispensing Emergency contraceptives: 60 (76%)
- Complementary prescribing: 43 (54%)
- Prescribing in an emergency: 29 (37%)
- Independent prescribing: 13 (16%)
- Therapeutic substitution (changing dose, formulation, etc.): 25 (32%)
- Adjustment of prescribed treatments: 100%

- Covid-19 testing (perform point-of-care test at the pharmacy): 14 (18%)
- Providing counselling on HIV self-test products: 27 (34%)
- Providing medicines and services in care homes (nursing homes): 43 (54%)
- Home deliveries: 40 (51%)
- Applying first aid and arranging follow-up care: 29 (37%)
- Home care and medicines review: 43 (54%)
- Services to hospitals and other facilities without a pharmacy: 40 (51%)

Jurisdictions where pharmacies are required to have a private consultation room, 2016-2020:

- 2020 (n=79): 23 (29%)
- 2016 (n=74): 19 (26%)
6. Community pharmacy remuneration models

Main principle of remuneration models per country or territory (n=72)

Countries and territories with single vs. multiple third-party payers (n=65)

- 28 (43%) As single third-party payer
- 37 (57%) Multiple third-party payers

Main principle of remuneration models, per WHO region (n=72)

Main principle of remuneration models, per income level (n=72)
7. Supply of non-prescription medicines through community pharmacies and other outlets

<table>
<thead>
<tr>
<th>Year</th>
<th>Total sample (n=79)</th>
<th>Continuous countries (n=54)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>29 (38.6%)</td>
<td>26 (34.7%)</td>
</tr>
<tr>
<td></td>
<td>20 (26.7%)</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>15 (18%)</td>
<td>24 (44%)</td>
</tr>
<tr>
<td>vs. 2020</td>
<td>13 (24%)</td>
<td>28 (48%)</td>
</tr>
<tr>
<td>NPMs not exclusively in pharmacies, but there is a pharmacy-only list</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPMs not exclusively in pharmacies, and there is no pharmacy-only list</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* NPMs not exclusively in community pharmacies. No information about pharmacy-only list.
8. Regulatory models for INN prescribing or generic substitution

Regulatory models in terms of the possibility for pharmacists to select and dispense a generic, 2020 (n=74)

Regulatory models in terms of the possibility for pharmacists to select and dispense a generic, 2016-2020 (in continuous countries and territories across the two surveys, n=41)