



## Role of Portuguese community pharmacy and pharmacists in self-care

Filipa Alves da Costa<sup>a,\*</sup>, Ema Paulino<sup>b</sup>, Sofia Crisóstomo<sup>c</sup>

<sup>a</sup> Research Institute for Medicines (iMED), Faculty of Pharmacy, University of Lisbon; Av. Prof. Gama Pinto, 1649-003 Lisboa, Portugal

<sup>b</sup> National Association of Pharmacies (Associação Nacional das Farmácias, ANF), Lisboa, Portugal

<sup>c</sup> University Institute of Lisbon (ISCTE-IUL), Lisboa, Portugal

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### ABSTRACT

Portugal recognizes the importance of self-care in its policies and has been actively engaging in health literacy and citizen empowerment. The current National Health Plan for the period 2021–2030 clearly mentions the need to “take greater advantage of the network of community pharmacies throughout the national territory, in favour of the health of the community, from the protection and promotion of health, through health literacy, to the prevention and early detection of disease, and the aggravation of chronic disease, among others”. There is recognition of the role of pharmacists and community pharmacies. However, more needs to be done to promote intersectoral collaboration, particularly as community pharmacies are private entities but can nonetheless support the public national health service. Community pharmacies assisted many individuals during the pandemic to test suspect cases free of charge. The fight to end AIDS and viral hepatitis is another example where community pharmacies promote self-testing and ensure efficient screening and referral to diagnosis and treatment. Portugal has already moved to reimburse community pharmacies for services with some of them in areas of self-care including COVID-19 testing. Nevertheless, future challenges include making community pharmacies sustainable. Taking into account that community pharmacies are private entities that can supplement the public health service just as any other provider, it is essential to review payment models, referral mechanisms and access and integration of information from other partners in primary and secondary care.

### 1. Introduction

The World Health Organization (WHO) defines self-care as “the ability of individuals, families and communities to promote health, prevent disease, maintain health, and to cope with illness and disability with or without the support of a healthcare provider”.<sup>1</sup> This manuscript aims to provide an overview of self-care public policies in Portugal and the extent to which these consider community pharmacies and pharmacists as partners in promoting self-care. It also aims to review pharmacy-based policies and activities developed in practice that support self-care in Portugal.

### 2. Self-care and health policy in Portugal

The Constitution of the Portuguese Republic, initially approved in 1976,<sup>2</sup> establishes health as a right for all, carried out through the National Health Service (P-NHS) and the state being responsible for public policies related to health promotion and its social determinants, such as income, education and physical exercise. These constitutional

provisions were further developed in the Health Basic Law, issued in 1990<sup>3,4</sup> which reinforced health protection as a joint responsibility of citizens, society and the state, as well as considering impact in all policies approach.<sup>5,6</sup> In 2019, this law was revisited.<sup>7</sup> Following the WHO framework on integrated, people-centred health services,<sup>8</sup> the concept of active citizen involvement, at individual, institutional and political decision-making were adopted, as well as access throughout the life course to health services across the continuum of care – health promotion, prevention, treatment, rehabilitation, long-term care, and palliative care. Another key idea introduced, in the context of an ageing society, is healthy ageing promotion along the lifecycle, in an inclusive and active way that favours the ability to make decisions and take control of one’s life, with informal carers also being recognized as having a vital role. The National Health Plan 2021–2030 on “Sustainable health: from all to all”,<sup>9</sup> which aims to improve health and well-being of all populations across the life cycle through a broad social commitment to reduce inequalities, proposes several intervention strategies related to self-care, namely health literacy promotion and education for chronic disease self-management. The plan also highlights the need to “take

\* Corresponding author.

E-mail address: [fpes@ff.ulisboa.pt](mailto:fpes@ff.ulisboa.pt) (F. Alves da Costa).

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greater advantage of the network of community pharmacies throughout the national territory, in favour of the health of the community, from the protection and promotion of health, through health literacy, to the prevention and early detection of disease, and the aggravation of chronic disease, among others”.

In addition, the National Plan for Health Literacy and Behaviour Sciences 2023–2030<sup>10</sup> focuses its action on the promotion of healthy lifestyles and the development of health promoting environments, with an enhanced attention to the most vulnerable populations, including those aged 65 or over, with chronic diseases, self-perception of poor health, low income or low education, as well as those resorting frequently to primary healthcare. The plan, although not explicitly mentioning pharmacy, also recognizes the importance of individuals being able to navigate the healthcare system and to take an active role in adopting healthy lifestyles, leading to health gains.

In a document produced by the Health Observatory of Health Systems, where the health system is described and illustrated, community pharmacies are formally recognized as an integral part of the health system, appearing side by side with other private entities that support primary care.<sup>11</sup> Furthermore, in articles 2 and 3 of the law describing the healthcare system, it states that “aside from establishments and services that integrate the P-NHS, other resources existing in the community may be used to improve the population health status, aiming for health gains”.<sup>12</sup> Community pharmacies and pharmacists are key actors in protecting and promoting health,<sup>13</sup> namely through literacy promotion and other actions supporting smoking cessation, healthy nutrition and prevention of diabetes and obesity, as well as the rational and safe use of medicines, including non-prescription medicines. Pharmacists are also key to ensuring integration of care, including care for people with long-term health conditions, acute illness or exacerbations of chronic diseases, as well as promoting home and self-care.<sup>13</sup>

### 3. Portugal demographics and pharmacy

In 2021, Portugal had a population of around 10.3 million inhabitants, representing a decrease of 2.1% in the last decade, despite a positive migration balance. The ageing index, at 127.6, is one of the highest in Europe. Mean life expectancy at 65 years is 19.7 years, although only 6.9 and 7.9 of those, respectively for women and men, are lived with quality, around 3 years less than the European average. The population tends to be unevenly distributed with a high coastal urbanized population density and low in rural areas, which poses additional challenges in terms of healthcare service planning and workforce allocation. The health care workforce has been increasing, with 5.6 physicians, 7.7 nurses, 1.1 dentists and 1.5 pharmacists per 1000 inhabitants in 2021.<sup>14</sup>

The gross domestic product (GDP) per capita for 2022 was 20,217 €, lower than the EU average, although with slight and constant increases in the last 12 years.<sup>15</sup> In 2021, the Government’s expenditure on health was 11% of the GDP, showing a progressive increase since 2000.<sup>16</sup> Out-of-pocket expenditure is higher overall than the EU average (27.5% vs 15.8%) and has been progressively growing. The largest investments in health care spending in Portugal have been on outpatient care, above the EU average. However, there are still barriers in access to primary care, which have progressively been tackled by action to bring more general practitioners (GPs) into the P-NHS and give municipalities a greater role in primary care planning and management.<sup>17</sup> In parallel, expenditure on inpatient care has been constantly below the EU averages, as well as the number of hospital beds per 1000 people.

Both primary and secondary care may be provided by public and private sectors, the difference being that only public services are covered by the universal P-NHS. Those wishing to use the private sector are incentivized to have a private health insurance, covering around a third of Portuguese citizens in 2020.<sup>18</sup>

One frequent criticism made to the Portuguese policy options is the limited investment put on preventive care, with Portugal spending less

than many other European countries (36€/person, 1.8% of total health spending compared to 3.2% in the EU), which hinders the full potential of self-care promotion.<sup>17</sup>

Community pharmacies in Portugal, given their characteristics, have been increasingly called out to contribute to the objectives set out by the Ministry of Health, namely by becoming point-of-care sites for HIV and hepatitis C screening, promoting uptake of flu vaccination, becoming a key accessible point for testing suspected COVID-19 cases, and for patients on hospital-only medications during lockdowns.

The number of pharmacists has progressively been growing and in 2022, there were 16,439 registered pharmacists, most of whom work in community pharmacy. Pharmacists in Portugal are young, with 35% below 35 years of age.<sup>19</sup> There are currently nearly 3000 community pharmacies, homogeneously distributed through Portugal’s mainland and islands, only possible because the legislation states demographic (minimum of 3500 inhabitants) and geographic (350 m between pharmacies; 100 m between the pharmacy and a health care centre) criteria for a new pharmacy to be opened. There are exceptions to this rule, including when the closest pharmacy is at >2 km; this exception is justified to incentivize pharmacies opening in rural and remote areas – those progressively deprived of other healthcare services.

Community pharmacies’ revenue comes mostly from a mark-up margin on the price of medicines dispensed. In the case of prescription medicines, the remuneration system is set by the Government. Community pharmacy services that have thus far been remunerated by the P-NHS use fee for service as a model, established nationally by the Government by law. These have comprised payment for generic substitution, participation in the needle exchange programme, testing for COVID-19, and flu and COVID-19 immunisation since 2023. However, there are many other services provided in community pharmacy, that tend to be charged and paid out-of-pocket by patients, or in rare instances, by insurers, such as simple health check-ups, or by municipalities, such as screening for HIV and Hepatitis B and C. For services paid out-of-pocket by patients, each pharmacy may establish its own price, whilst for insurers and municipalities, there is usually a contracted price negotiated by the National Association of Pharmacies (ANF, from the Portuguese *Associação Nacional das Farmácias*), the pharmacy owners’ association that represents 94% of all community pharmacies in Portugal.

The plan of activities of ANF for 2023, continuing from previous years’ plans, identifies the development of new services that meet the health needs of the Portuguese population as a key intervention area for development. Even though there is no explicit mention to self-care in plans or policies, throughout the years, ANF has developed guidelines and protocols for several pharmacy interventions, and made them available to pharmacy teams, alongside training programs to capacitate them. Worth mentioning that ANF often works in close collaboration with the Portuguese Pharmacists’ Society (PPS), who have developed two important norms in the area of self-care, providing standards and guidance in the responsible use of medicines and in health education.

### 4. Self-care in community pharmacies in Portugal

Self-care interventions are evidence-based and can support the efficiency of healthcare systems. There are three main groups of self-care interventions: self-management, self-testing and self-awareness (Fig. 1, adapted from<sup>20</sup>). This framework will be used to guide the description of interventions promoted through community pharmacies in Portugal.

The ability of individuals to be empowered in self-care may be fostered by healthcare agents, such as pharmacists, through the delivery of interventions that promote individuals’ autonomy in the management of their health and well-being. WHO proposed a classification of self-care interventions that considers the role of the facilitator of self-care as central. Therefore, interventions are grouped under four categories: Interventions for self-carers and caregivers; Enabling actions by health workers; Enabling actions by health programme managers; and Enabling

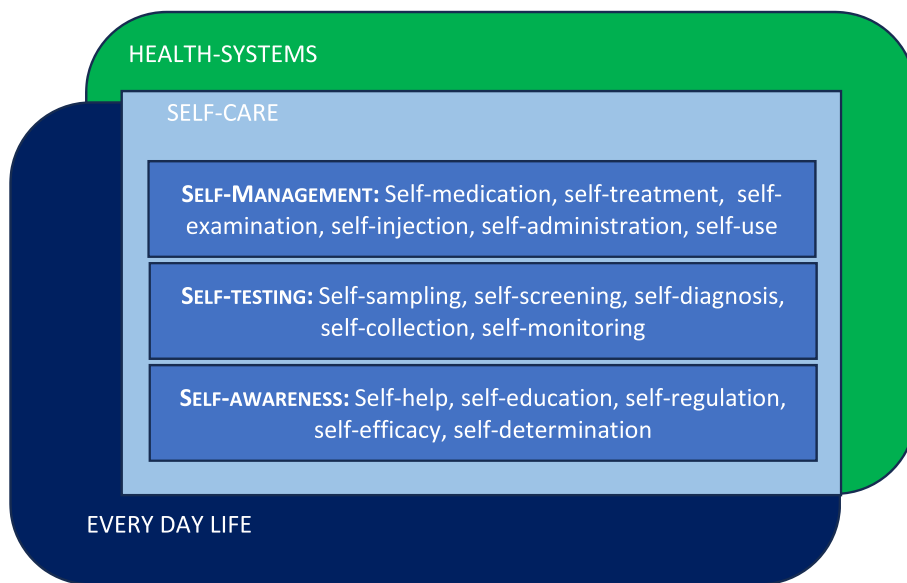


Fig. 1. WHO simplified model of self-care.

actions by health policymakers, legislators and regulators.<sup>20</sup> This paper will be focusing on the second group, which are actions taken by all health workers, to support, promote and oversee self-care interventions and these comprise six categories (Table 1).

4.1. Self-management

Self-medication is a frequent practice in Portugal, with a prevalence of 21.5% in rural areas and 26.2% in urban areas.<sup>21,22</sup> Self-medication with NSAIDs is sought for numerous medical conditions.<sup>23</sup> The quality of advice provided by pharmacy-staff was described as suboptimal.<sup>24</sup> Consequently, structured community pharmacy minor ailment protocols have been developed by various entities, including the regulatory agency (INFARMED), the Portuguese Pharmacists’ Society (PPS) and ANF.<sup>25–27</sup> An analysis on some of these protocols concluded that overall, they met the standard for ailment characterization, whilst there was room for improvement on steps related to medicine information and selection, and steps for patient participation and agreement were absent, as was pharmacists’ expected role of outcomes monitoring.<sup>28</sup> Subsequent studies have shown a very high satisfaction score of individuals following self-medication private consultations, suggesting the advancement of the pharmacists’ clinical role in self-care.<sup>29</sup> Other studies conducted in rural settings, have also shown that >85% of patients’ beneficiaries of pharmaceutical counselling had their minor health problems solved after one week.<sup>30</sup>

Pharmacists develop a variety of interventions primarily targeted at the elderly, including those living independently. However, not all interventions are equally supporting self-care. In fact, some interventions including the use of dose administration aids (DAAs) has been criticised for decreasing awareness and control of medication. Conversely, community pharmacists and pharmacy owners believe that DAAs have a very positive impact in terms of safety and medication adherence, and the majority agreed that it also helped reduce medication waste.<sup>31</sup> To ensure that this service is carried out in a way that increases its positive impact, the PPS has produced national guidelines for the preparation of DAAs.<sup>32</sup>

In respiratory diseases, community pharmacists have shown to decrease the number of scheduled medical appointments following an education intervention on patients’ inhalation technique.<sup>33</sup> This intervention is considered routine for patients starting a new inhaler and is not paid for by the individual nor the P-NHS.

Community pharmacies in Portugal have been providing vaccination services since 2008 being authorised to administer several vaccines, based on a prescription. From 2021, pharmacists with a competency recognized by the PPS may dispense and administer flu vaccines to patients aged ≥60 without a prescription. In 2023, community pharmacies will start to be reimbursed by the P-NHS for this patient group both for flu and COVID-19 vaccines.<sup>34</sup>

Table 1 Pharmacist-led interventions in Portugal according to the simplified WHO model of self-care.

Domain	Activity	Specific Examples
Self-management	Self-medication, self-treatment, self-examination, self-injection, self-administration, self-use	Minor ailments scheme Interventions targeting older people living independently Education on inhalation technique Vaccination
Self-testing	Self-sampling, self-screening, self-diagnosis, self-collection, self-monitoring	Early identification of persons at risk for diabetes Cardiovascular risk screening Respiratory disease screening Colorectal screening HIV and viral hepatitis testing COVID-19 testing
Self-awareness	Self-help, self-education, self-regulation, self-efficacy, self-determination	Needle and Syringe Exchange Programme Smoking cessation Taking Care of Myself Generic substitution and uptake

## 4.2. Self-testing

Portugal has a long-lasting history in developing self-care interventions in diabetes. A review of Portuguese diabetes-related policies has shown positive evidence from pharmacy interventions focusing on screening individuals at risk, screening uncontrolled patients, managing diabetes, and supporting self-monitoring.<sup>35</sup> Pharmacists promote health-seeking behaviours by advocating for frequent checking of blood sugar values, inform about self-management practices to prevent diabetes development but also to control diabetes, namely in terms of nutritional advice and physical activity. An assessment made in nearly 1000 participants through FINDRISK followed by measurement of HbA1c levels, led to GP referral and diagnosis of 24 pre-diabetes (7.8%; CI95%: 6.2–9.8%), and 11 diabetes cases (2.5%; CI95%: 1.6–3.8%).<sup>36</sup>

Portugal is one of the pioneer countries in Europe to identify individuals at high-risk of cardiovascular disease in a timely manner. In Portugal, over 90% of community pharmacies regularly provide point-of-care (POC) testing for blood pressure, cholesterol, body mass index, and glycaemia. POC is often used in the context of screening. An event involving 60 community pharmacies and over 1000 individuals showed 20% of participants were at high 10-year risk of fatal CVD; a national campaign “Know your heart values” involving over 400 community pharmacies and 12,930 participants found 45% of individuals at high risk of developing a fatal cardiovascular event in the next 10 years, demonstrating the potential of involving pharmacies. However, POC may also be used to support ongoing disease management. A study where nearly 400 patients were enrolled showed that 75% of the initially uncontrolled patients achieved systolic control after 9 months and that both mean systolic and diastolic blood pressure significantly improved from baseline ( $p < .001$ ).<sup>37</sup> Another developing area is the contribution of pharmacists and community pharmacies to the early identification of patients with arrhythmias, which was initiated in the context of a research study where nearly 1000 individuals were recruited in Portugal. The event focused on raising awareness, motivating self-checks through pulse palpation but allowed the identification of undiagnosed arrhythmia cases (6.8%).<sup>38</sup>

Apart from POC, pharmacists in Portugal have also been using validated questionnaires to assess for risk and monitor disease control, even if not a widespread or standardised practice. For instance, using self-assessment tools, pharmacists can also help identify patients with uncontrolled allergic rhinitis and asthma disease, and counsel them on the correct use of medication or refer them to the treating physician.<sup>39</sup> Further work is currently under way where three aspects of care pathways are being developed: (i) Patient participation, health literacy and self-care through technology-assisted “patient activation”, (ii) Implementation of care pathways by pharmacists and (iii) Next-generation guidelines assessing the recommendations of GRADE guidelines in rhinitis and asthma using real-world evidence obtained through mobile technology.<sup>40</sup>

Colorectal cancer (CRC) is the most frequent and deadly cancer in Portugal, and prevention and screening are key for improving survival rates. Community pharmacies have been participating in awareness and screening campaigns, collecting stool samples and sending them for testing. In one of these campaigns, >4000 people aged  $\geq 50$  years were screened and 4.2% identified as positive.<sup>41</sup>

Portuguese community pharmacies have also partnered with some municipalities in the context of the implementation of the Fast Track Cities concept, to end the HIV/AIDS epidemic and eliminate Hepatitis C. This involves municipal strategies to increase the performance of screening tests, to promote early detection and break the cycle of transmissions by 2030. A pilot project conducted in 21 community pharmacies in the Cascais county revealed an important contribution of pharmacy in the access to tests by migrant populations and younger age groups.<sup>42</sup>

In June 2021, the P-NHS decided to reimburse Rapid Antigen Tests for all citizens, without the need for a medical prescription, with the aim

of ensuring universal health coverage. By September 2022, community pharmacies performed >13 million tests. The inclusion of community pharmacies in the national testing strategy allowed 74 more municipalities to have a rapid testing site, filling geographical and socioeconomic gaps in the national coverage. A standardised protocol was developed by ANF to ensure consistency and quality in service provision. The inclusion of community pharmacies allowed each Portuguese citizen to save, on average, 2 km of travel per test performed, and in 19 municipalities these trips would be >25 km without pharmacies. Pharmacies contributed to reduce the Gini inequality index of access estimated by the average distance to the nearest test performance site, with a special impact for those living in municipalities with lower population density, where the purchasing power is lower and in those who are older. Pharmacies' contribution was estimated to reduce the number of infections (−14.5%), days of hospitalization (−7.4%) and deaths (−6.7%) for a 60-day period.<sup>43</sup>

## 4.3. Self-awareness

The needle and syringe exchange program (NSEP) initiated in 1993 as a response to the sudden period of drug use expansion lived in Portugal and resulted from a partnership established between the National Commission Against Aids and the ANF, with the main aim of minimizing risks associated with the use of injectable drugs. Pharmacists' role involves the exchange of used material for sterile equipment and provision of information about associated risks. NSEP is internationally recognized for its contribution to minimize HIV, HCV, and HBV infections. In 2016, the contribution of pharmacists was valued at an overall system savings of over 2 million euros in a 5-year period, hence leading to the government's reimbursement of 2.40€ per kit exchanged.<sup>44</sup>

Promoting healthy living habits is part of self-awareness and the pharmacist has been particularly active in the area of smoking cessation for >15 years, even if not all successes are well documented. One report refers to pharmacist consultations to 135 individuals across 8 community pharmacies showing that 70 (51.9%) smokers complied with the quit day, of whom 59 (43.7%) were smoking-abstinent at the end of the first month.<sup>45</sup>

“Taking Care of Myself” is a health literacy program developed by various stakeholders, to make the Portuguese population aware of the importance of responsible and safe use of non-prescription medicines, for the relief and treatment of minor ailments. This initiative aims to encourage people to take responsibility for their own health, explaining in a simple and clear way when to seek pharmaceutical advice or seek medical care, and includes the development of informative materials that allow citizens, and also health professionals, to know and guide individual health decisions.<sup>46</sup>

The pharmacists' role in educating patients to promote the uptake of generic medicines has been recognized through an incentive regimen established in 2016. The progressive increase of the market share to just below 50%, nearing the EU average, suggests increased health literacy of the population, although there are still opportunities to increase the population's confidence on their effectiveness.<sup>47</sup>

## 5. Pharmacists' education and training for self-care in Portugal

In Portugal all institutions providing education in pharmaceutical sciences offer a 4.5-years degree, followed by an internship period of 22 weeks in community or hospital pharmacy. The European Credit Transfer and Accumulation System (ECTS) is used, enabling student and professional mobility within the European space. Even though there is diversity and flexibility in the curricular units offered, compliance with the directive allows students to be recognized by the PPS as fit for practice and register.<sup>48</sup> However, there is a perceived mismatch between education and practice.<sup>49</sup> PPS is responsible for establishing the norms associated with professional activity and since 2004, continuous

professional development (CPD) became mandatory. The model foresees that pharmacists should complete 15 CPDs in each cycle of evaluation, every five years. However, pharmacists are free to choose the courses and the model of training. Following the international trends, the PPS initiated work in the development of competency frameworks in 2014 focusing on professional areas of activity. In 2019, a regulation was published anticipating active involvement of all pharmacists in proposing new competences, either cross-sectional, when covering at least two areas of practice, or specific if applicable to one single area of practice.<sup>50</sup> Since then, four new competencies have been proposed, but none focused on self-care. There have been efforts to create platforms to bring together practitioners and academics to share a common vision of education that is aligned with the current challenges of the profession, which in turn should answer to the demands of an ageing and progressively more multicultural society.<sup>51</sup> However, to date these have not resulted in visible changes in the education and training or in career development of pharmacists.

## 6. Conclusions

Community pharmacies in Portugal have long been used and recognized by the population as a gateway to care, as described throughout this paper. Lack of integration with other healthcare providers has, however, hindered its full potential to contribute further to self-care. In fact, one of the major challenges for the Portuguese healthcare system has been the absence of articulation between the private, public and social sectors. Work is now underway to integrate information from the different sectors in a person-centred health electronic record, which will be accessible to all healthcare professionals, based on the persons' consent. Following the implementation of the prescription renewal service in community pharmacies, communication channels between prescribers and pharmacists are also being deployed.

Recent developments such as the remuneration of the COVID-19 testing and the flu and COVID-19 vaccination service, as well as the recent invitation to participate in a pilot to educate patients to call the P-NHS phone line before resorting to emergency care units, is interpreted as a sign that community pharmacies will be called upon more frequently to participate in national strategies in this regard.

## Declaration of Competing Interests

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Ema Paulino is the President of the National Association of Pharmacies.

Filipa Alves da Costa and Sofia Crisóstomo declare no conflicts of interests.

## Declaration of Competing Interest

None.

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