

Review Article

Gaps and Opportunities in Outpatient Cancer Care Across Europe: Insights From a Panel of Experts on the Role of the Pharmacist

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Cancer is a major health priority in Europe and the risk of mortality is greater than for any other disease. Cancer care is complex, and interprofessional care has been identified as a key aspect in providing best-practice treatment and care for patients with cancer. Proximity of providers and fruitful interactions within the cancer care network are relevant to collaborative care models to tackle the complexity of cancer care. Pharmacists have been increasingly recognized as being well positioned to promote health and educate patients about their diseases and the appropriate use of prescribed medicines including anticancer agents. Although hospital pharmacists are acknowledged members of cancer care teams, community pharmacists are an untapped health resource, not fully integrated into the cancer care network, and often perceived as mere drug sellers rather than potential cancer patient allies. In this work, a panel of European experts explored the role of pharmacists and their integration into the cancer care network and developed actionable suggestions to take advantage of pharmacists' role as medication experts with the final aim of optimizing cancer care.

Keywords: cancer care; community pharmacy services; education; hospital pharmacists; patient needs

1. Introduction

One in four of all cancer cases occur in Europe and cancer accounts for more deaths among individuals older than 65 years than any other illness [1]. Despite tremendous advances in cancer therapeutic options and the increasing number of survivors, the cancer burden is not declining in the European Union (EU), and cancer deaths are projected to increase by more than 24% by 2035 [2]. Moreover, the impact of cancer on the EU economy is also substantial and is estimated to exceed €100 billion annually [3].

Patients with cancer are frequent users of several services from multiple providers across settings at various healthcare

facilities during their cancer journey, including oncologists, hematologists, noncancer specialists, primary care physicians, nurses, pharmacists, physiotherapists, psycho-oncologists, and social workers [4]. Patients' needs change significantly from diagnosis to survivorship or palliative care and would demand both efficient collaborative care models and an integrated care across providers and settings over time [5].

In this scenario, the role of oncology pharmacy could be expanded with pharmacists contributing to improving cancer care as members of the interprofessional cancer care team in different settings, including hospitals, infusion centers, outpatient health facilities, and community pharmacies [6–9]. In

the outpatient setting, the proximity of community pharmacies to cancer patients and their participation in cancer care is advantageous. Mounting evidence suggests that community pharmacy staff are interested in participating in education regarding cancer but need more knowledge to properly counsel cancer patients and survivors at the community pharmacies [10]. The Pharmaceutical Group of the European Union (PGEU) has suggested that access to healthcare services close to where people work or live should be increased to meet the needs of Europe's patients and healthcare systems in their fight against cancer [11]. Therefore, engagement with community pharmacy staff to provide support to patients with cancer becomes highly relevant given the current shift from a care provision mainly delivered within hospitals to one provided as close as possible to patients' home [10]. However, no standardized healthcare services specifically targeting patients with cancer and survivors are offered at community pharmacies across Europe. As a result, the engagement of community pharmacists in cancer care is poor and, despite their proximity to patients, these providers are an untapped health resource, not fully integrated into the cancer care network [10].

This work aims to explore the role of oncology pharmacies across Europe and facilitate their integration into the cancer care network. A panel of European experts, encompassing hospital and community pharmacists, cancer patients, doctors specialized in medical oncology, and psycho-oncology as well as institutional representatives from the European Mission on Cancer reviewed the literature, identified relevant topics, and developed actionable suggestions. Supporting Table S1 illustrates the list of the participating experts involved in this panel, their representative institutions and/or role, country, and relevance to the work. Here, we present the main insights from the panel discussion and provide actionable suggestions to take advantage of pharmacists' role as medication experts to optimize cancer patient care.

2. Methods

2.1. Governance, Designation, and Identification of Experts. Based on their proficiency in oncology pharmacy, including previous publications in this domain, as well as experience in cancer patient care journey, a five-member Board was appointed. The five experts from different European countries (Italy, Germany, and Poland) were selected to be representatives of the differences that exist in cancer care provision by pharmacists across Europe. As stated in the latest PGEU position paper on cancer [11], there are major differences between community pharmacy practices across Europe, mostly due to the legal framework and remuneration issues, which have an impact on the range of services available from pharmacies to the community in each country, including cancer prevention, early detection, and treatment. Differences in the access to oral anticancer agents through community pharmacies, as well in the implementation of new medicine services, medication use reviews, and adherence support programmes, have a significant impact on cancer care provision. Therefore, the experts, fully

aware that their opinions may not be fully generalizable due to these differences, agreed that for the purpose of this work, pharmacists would refer to healthcare professionals who have completed their pharmacy education in a member state of the EU, European Economic Area (EEA) or in Switzerland, whose profession granted automatic recognition of qualifications under the Directive on the Recognition of Professional Qualifications (Directive 2013/55/EU) regardless of the country where they work. In this work, pharmacists are university-trained healthcare professionals who are experts in the supply and use of medicines. They are authorized to supply medicines, either with or without a prescription, and have a vital role in healthcare, providing advice on medication use and safe dispensing, irrespective of where they provide these services.

2.2. Experts' Insights Collection and Development of Actionable Suggestions. The experts initially engaged in one-to-one interviews, managed by EDRA, to gather preliminary insights on the role of pharmacists in cancer care across Europe and explore how to unleash the potential of integrating pharmacists in cancer care networks. Five themes emerged from the interviews: gaps in cancer care networks; access to anticancer agents; pharmacist-led communication with patients with cancer; challenges in engaging pharmacists in cancer care networks; and the setting for dispensing oral anticancer agents. The experts took part in two online meetings between November and December 2023 and based on their own practical experience, further developed the themes, made actionable suggestions, and drafted the outline for the manuscript. At the end of each meeting, detailed minutes of the panel discussion and the actions to be taken were prepared and approved by all the experts.

2.3. Selection of Evidence. The panel of experts reviewed the evidence in the published literature to first explore the role of pharmacists in cancer care and provide further evidence for their insights/actionable suggestions. Papers considered for the review were identified by a PubMed search completed in November 2024 using different combinations of keywords (e.g., pharmacist AND cancer care; oral anticancer agents AND community pharmacists). Papers were selected for inclusion according to their relevance to the topic, as judged by the experts, without limitations in terms of publication date and language.

3. Challenges in Cancer Management: From Gaps in the Provision of Care to Patients' Unmet Needs

In recent decades, the field of oncology has seen the emergence of major innovations, including the introduction of personalized medicines, immunotherapies, chimeric antigen receptor T cell (CAR-T) cell therapies, and oncolytic viruses. Since 2000, the European Medicine Agency (EMA) granted marketing authorization (MA) to 340 anticancer agents with 25 agents approved only in 2023 [12, 13]. There has been a health breakthrough in cancer therapeutics in

European countries, extending the life expectancy for many patients with cancer. Unfortunately, patients with cancer are not benefitting from such unprecedented progress equally across Europe because access to care is far from equitable [14, 15]. As underlined in a recent policy paper, unacceptable disparities in access to cancer care are prevalent in Europe, between and within European countries, and have a major impact on cancer incidence, survival, and mortality [16, 17]. Previous studies and reports have indicated worse access to novel anticancer agents in Central and Eastern Europe (CEE) compared with Northern and Western Europe, both in terms of availability and time from EMA MA to national approval of reimbursement. To date, patients in Latvia can access to only 14% of newly authorized anticancer agents compared with patients in Germany who can access to 95%. There are also large differences in time to access; a patient in Serbia may have to wait an average of nine times longer than a patient in Germany before a newly authorized drug becomes available on average; in Bulgaria, patients wait five times longer on average [18].

Oral chemotherapy has revolutionized oncology treatment by providing ease of administration, the convenience of taking these medications at home and sparing patients from the burdensome complications related to intravenous access, including extravasations, venous sclerosis, infections, and injection site reactions. Across Europe, the healthcare settings where oral anticancer agents are dispensed vary widely, reinforcing disparities in access to cancer treatment; patients with cancer in the United Kingdom, Belgium, and Poland have to travel to the hospital to receive their treatment whereas patients in Germany, for instance, can fulfill their prescription in the community pharmacy of their choice [19].

Cancer care should go beyond medications. Regardless of the tumor type, patients can experience mental disorders, including depression and anxiety, which can have a severe impact on their quality of life and their response and adherence to the prescribed treatment. Therefore, patients with cancer, survivors, and their caregivers should have access to psycho-oncological support to better cope with feelings of fear and worry, emotional distress, and mental health disorders from diagnosis to survivorship and/or palliative care. Unfortunately, disparities have been also reported in the implementation and provision of psycho-oncological support in hospitals and cancer centers across Europe [20]. Differences in care that still need to be bridged are also evident within the cancer care network; limited interactions may arise between patients and all the other potential care providers, including hospital pharmacists, nurses, and outpatient providers. Although not effectively standardized in daily routine practice across Europe, hospital pharmacists participate in ward rounds, complete chart reviews, and provide medication-related services to patients and are an integral component of the inpatient cancer care team [8]. However, patients do not fully perceive that cancer care encompasses a wide range of providers beyond the oncologists and hematologists who often remain, along with oncology nurses, the best-known reference provider for the patients during the entire disease course.

In addition to the disparities and gaps in cancer care provision, patients with cancer report several unmet needs, including a lack of accurate, up-to-date information that is accessible to patients [15]. Provision of appropriate information is critical to help patients navigate the entire trajectory of cancer care and is increasingly relevant post-treatment because cancer survivors in Europe strive to live both with and beyond their disease. However, in many cases, the quality of patient information provided is too complex and inaccessible to the average reader. In addition, such unmet needs hamper the development of a good patient-clinician communication, which is a premise for an effective shared decision-making process. The main gaps currently hindering an adequate cancer care provision in Europe identified by the panel of experts are presented in Table 1.

4. Evolution of the Pharmacy Profession From Mere Dispensing to Multiservice Provider

In the last decades, increasing health demands, a complex range of chronic medicines and the poor adherence to prescribed medications have led to a shift in the pharmacy profession from a product-centered provider (dispensing medications) toward a patient-centered practice [21]. As a result, pharmacists have been increasingly recognized as being well positioned to promote health, educate patients about their diseases and the appropriate use of prescribed medicines, and the relevance of adherence [22].

Extending the scope of pharmacy practice has been proven to benefit the society. For example, pharmacists have progressed from professionals educating and motivating patients to receive immunizations to immunizers. It has been well reported that when a greater accessibility to vaccination services was offered through the network of community pharmacies, vaccination coverage increased, first for the flu vaccine and more recently for COVID-19 [23]. During the COVID-19 pandemic, pharmacists not only offered point-of-care antigen testing and vaccination and virtual care provision (delivery of telepharmacy and telehealth services) but also experienced changes in dispensing procedures. To date, in some countries (e.g., Portugal and Spain) dispensing of outpatient high-cost medicines for oncology, previously performed exclusively through hospital pharmacies has been transferred to community pharmacies [24, 25], thus sparing patients from unnecessary trips to the hospital. This new dispensing setting still required a close coordination between hospital and community pharmacists who could rely on a support network and provide feedback to hospital pharmacists when medication-related issues might have occurred. Overall, the pandemic has encouraged community pharmacists to take on novel and innovative roles and has paved new ways to cooperate with oncology pharmacy specialists working as inpatient and outpatient oncology pharmacists.

However, patients still have the traditional view that a pharmacy is exclusively a place to pick up medication, so they do not expect to be counseled on cancer; they may have been provided with information about anticancer agents (including medication error prevention) by either the oncologist/haematologist or the oncology pharmacists. Thus,

TABLE 1: Gaps currently hindering adequate provision of cancer care in Europe as identified by the experts during the panel discussion.

Access to treatment	Access to cancer treatment is highly variable across Europe with significant disparities in access to anticancer agents, radiotherapy usage and surgical procedures. The healthcare settings in which oral anticancer agents are dispensed vary widely across Europe; patients in some countries have to travel to the hospital to receive their treatment whereas others can get their prescription in the community pharmacy closest to their home. Relevant barriers and disparities are reported in both the implementation and provision of psycho-oncological support in hospitals and cancer centers across Europe, which can have a severe impact on patients with cancer and survivors' quality of life. Substantial workforce shortage of general practitioner and pharmacists across Europe along with a limited confidence in these providers when dealing with patients with cancer makes cancer care outside of hospitals becoming a pressing priority.
Cancer care network	Patients with cancer are not always aware of all the healthcare providers who can care for them. As a result, patients with cancer consider the oncologist/haematologist as the only reference provider both inside and outside of the hospital. Limited or no interaction between patients with cancer and hospital pharmacists who often communicate with oncologists only within the tumor board setting. No interaction has been reported between inpatient (oncologists, nurses, and hospital pharmacists) and outpatient providers (general practitioners and community pharmacists). Websites of patients' associations and scientific societies are valuable sources of information for patients with cancer but are not used equally by the patients, particularly those who are less familiar with the internet or less proactive in seeking help. Patients' associations collaborate with clinicians but there are no joint initiatives with either hospital/community pharmacists or general practitioners.
Patient-physician relationship	The quality of patient information provided is too complex and inaccessible to the average reader because of the use of jargon and medical terms. Physicians often lack competencies in how to initiate a shared decision-making process with the patient. Patients with cancer and their families and caregivers are often not provided with a timely, relevant, objective, and understandable information to help them understand the process that will be followed with their treatment from the point of diagnosis. The quality of patient education and engagement provided is highly dependent on the time that oncologists and hematologists voluntarily devote to this as no allocated mandatory time for cancer patient education is currently established by law within the time visit on a routine basis.

personal communication between the pharmacists and the patients has been documented as being limited with the public perceiving them as a mere supplier of prepackaged medicines [26]. In line with this, a study in the United Kingdom suggested that awareness of pharmacy services beyond the supply of medicines remains low [27].

Although pharmacists can be the first point of contact for some healthcare consumers and they have extensive expertise regarding medication, they are disregarded in recent healthcare policies [26, 28]. Overall, there is an ongoing debate about the relevance of refining the identity of the pharmacy profession [22].

As recently advocated by the PGEU, European community pharmacists are strongly committed to an enhanced role in providing quality, convenient, and affordable access to professional healthcare services within their domains of expertise related to cancer management [11]. To this end,

significant advances in cancer care can be envisioned if community pharmacists can act as oncology pharmacists along with their role as general pharmacists, thus serving as additional healthcare professionals in cancer care teams.

5. Beyond Oncologists and Hematologists, Hospital and Community Pharmacists May Serve as Additional Reference Persons for Patients With Cancer

During the disease course, patients with cancer enter an outpatient or community pharmacy countless time, and this trend is projected to increase as more patients are treated with oral anticancer agents. Pharmacists, as the last point of contact of patients before commencing treatment, may add value by supporting people taking anticancer agents as

prescribed by monitoring treatment plans and helping them to better cope with the side effects of chemotherapy. Pharmacists are pivotal in implementing risk-minimization measures and educating patients about adverse event (AE) management and self-reporting. Nevertheless, when managing side effects secondary to chemotherapy, community pharmacists may experience issues because of a lack of access to patient information; therefore, the use of technology and enhanced access to patients' health records may improve pharmacists' ability to provide quality care [29]. Cancer care is often provided in ambulatory settings, therefore increasing involvement of both family and informal caregivers has been observed in the provision of cancer care. The expanding use of oral anticancer agents is posing major safety concerns for patients and their caregivers. In this scenario, counseling patients and caregivers about appropriate methods to handle and dispose of hazardous medicines is paramount and educating them about appropriate doses and regimens can help minimize errors related to medication administration, which are particularly relevant in outpatient pediatric care [30].

Despite the increased number of oral treatments currently available, intravenous anticancer therapy is still indispensable and thus a substantial number of patients receive anticancer agents as inpatients and outpatients in hospitals throughout Europe. In this scenario, hospital pharmacists prepare ready-to-administer anticancer therapies in centralized aseptic cytotoxic preparation units and check the plausibility of the prescriptions according to the established anticancer therapy protocols including dose adjustment relative to organ function and comorbidities of the individual patient. They also teach nurses and doctors about the safe use of hazardous cytotoxic medication and provide extravasation kits and education for prophylaxis and treatment of extravasation.

Even when anticancer agents are not dispensed in community pharmacies, patients with cancer still seek help from their local pharmacies and general practitioners. People with cancer often require several supportive care and symptom control medications and, importantly, report at least one comorbid condition. Patients with comorbidities are at increased risk of complications with anticancer agents, which can have a detrimental impact on the efficacy of cancer management. On the other hand, both cancer and its treatments may have an impact on comorbidity outcomes [31]. Thus, pharmacists' contributions in delivering supportive care to patients with cancer may be of relevance to optimize cancer care on a daily basis and help empower community pharmacists to manage patients whose therapeutic outcomes are greatly influenced by their cancer-related complications and comorbidities.

Management of patients with cancer during the transition of care from hospital discharge to home is often challenging and can be the most vulnerable point for patients. Although patients will receive information about their anticancer agents' prescription and treatment protocol from the hospital pharmacists and/or oncologists on the discharge day, community pharmacists may often encounter patients who are discharged without being given sufficient

information about their therapy. A study revealed that patients postponing a visit to the community pharmacy upon hospital discharge are more likely to discontinue the prescribed treatment [32]. In contrast, involving pharmacists in multiple transitions of care services (e.g., medication history, medication reconciliation, and follow-up) for patients with cancer may help reduce hospital readmission and facilitate AE management.

It has been reported that 40% of cancer cases in the EU are preventable [3]. Community pharmacies offering smoking cessation services, nutrition advice, health promotion (including public health campaigns), and recommending and administering (in some European countries) human papillomavirus (HPV) and hepatitis B virus (HBV) vaccines may contribute to significantly raise awareness on cancer among the general population and serve as a cancer diagnosis hub, as already seen for cardiovascular diseases and diabetes.

Several studies have reported that community pharmacists perceive interaction with patients with cancer as difficult because of a lack of relevant training and training materials as well as the lack of guidelines for communicating with patients with cancer [10]. A knowledge gap is often observed because community pharmacists are not specialized in care for oncology patients. The pharmacy curriculum includes few oncology-related topics and pharmacists may often find themselves to be more hesitant and even uncomfortable at times when faced with a prescription for an antitumor medication. A Canadian study has found that only 13% of community pharmacists feel adequately prepared to provide care to cancer patient [33].

There is a need for an established and organized collaboration with other healthcare professionals for effective and efficient involvement of community pharmacists in cancer care. Although collaboration between oncologists/hematologists and hospital pharmacists is well established, no evidence of such interactions has been documented regarding community pharmacists and oncologists/hematologists. Thus, education and policy recommendations that can endorse community pharmacists as providers of value within their institutions are urgently needed to enable successful community-centered care in oncology.

6. Interventions to Facilitate Pharmacists' Integration in the Cancer Care Network and Empower Them as Trustful Source of Information for Patients

Despite significant efforts in optimizing cancer patients' outcomes, cancer care still appears poorly coordinated and fragmented. Thus, there is a compelling need to improve the efficiency of interventions throughout the cancer care continuum and to devise more effective collaborative care models. As successfully implemented in the management of patients with chronic diseases such as hypertension, type 2 diabetes, and asthma [34, 35], the collaborative care model can also be used to integrate pharmacist-led interventions into cancer care and to foster interprofessional collaboration

in everyday practice [36]. In line with this, the PGEU hopes for the active involvement of the community pharmacists in collaborative care models in which their medication expertise can serve as a reliable asset and resource for physicians, thereby improving the health outcomes for patients and optimizing healthcare utilization [37]. It is paramount to devise interventions to facilitate pharmacists' integration in cancer care teams to optimize cancer care and establish regulatory frameworks to maximize their value to the communities they serve.

6.1. Addressing the Knowledge Gap With Educational Programmes. Community pharmacists need to be supported to undertake appropriate training so they can better support people with cancer. Postgraduate training and information tools could be helpful; as demonstrated by some initiatives at a global level such as the EviQ, the national program of the Cancer Institute NSW in Australia or the e-learning courses organized by multiple institutions including the US Hematology/Oncology Pharmacists Society, the British Oncology Pharmacists Society, the International Society of Oncology Pharmacy Practitioners, and the Canadian Association of Pharmacists in Oncology [38]. Some initiatives carried out in Europe could help inform future interventions and establish best practice models. In 2011, a joint initiative, named Oral Anticancer Therapy—Safe and Effective, between the German Society for Oncology Pharmacy and the German Cancer Society devised tools and training program content that can be delivered at regional meetings and monographs, to support community pharmacists interacting with patients with cancer who are taking oral anticancer agents. In 2015, the European Society of Oncology Pharmacy (ESOP) launched the Empowering Patients to Improve Health Care for Oral Chemotherapy (EPIC) initiative which targeted pharmacists involved in the dispensing of oral chemotherapy. The aim of the EPIC initiative was to create a European best practice model for the development and implementation of supportive services for pharmacists in oral cancer therapy. In addition to the development of an online and face-to-face training program for pharmacists, the EPIC Project implemented an oral anticancer agent database for pharmacists and patients (the “Oralia” database). Such initiative, implemented as pilot in Germany and later in Slovenia and Estonia, has led to the establishment of a best practice model with a planned rollout to other European countries such as Spain, France, Belgium, Austria, Denmark, Italy, Poland, Romania, and Bulgaria [19].

Continuing professional development fosters advancement in knowledge and skills and can support changes in practice. Educational programmes, organized in partnership with scientific societies such as the European Society of Medical Oncology (ESMO), the ESOP, and the European Association of Hospital Pharmacists (EAHP), may benefit community pharmacists by providing updated scientific evidence-supporting anticancer therapy and foster fruitful discussion with specialized pharmacists with a focus on medication safety in the context of patient

disease response, during and after therapy. It is worth mentioning that the International Pharmaceutical Federation (FIP) released a handbook outlining the knowledge and skills recommended in cancer care for pharmacists. This handbook could inform initiatives at the member state level to update pharmacy curricula at the undergraduate level, thus minimizing a potential shortage of trained pharmacists who can provide services to complex patients like the patients with cancer [39]. Encouraging community pharmacists' participation in education can be achieved through both mandatory requirements (e.g., continuing education hours) and voluntary engagement such as offering opportunities for mentorship, teaching, or community outreach. Pharmacists could be given the opportunity to choose tailored courses to match their roles and experience.

6.2. Embarking on Close Partnerships With Patients' Associations/Advocates. Partnerships with patients with cancer' organizations are also highly desirable because they can pave the way to better interactions with patients and thus are a trustful source of information. The lack of guidelines for communicating with patients with cancer has been also reported as a barrier by pharmacists [10]; therefore, efforts to develop a specific guideline for patient-centered communication with patients with cancer might be helpful.

The potential of initiatives aimed at fostering close partnerships between patient associations and community pharmacists is two-fold: (a) increased awareness of patients care needs amongst community pharmacists may encourage proactive conversations and networking activities and facilitate patient counseling and (b) increased awareness of pharmacist-led interventions that can be helpful along the cancer journey may make patients keen to view the community pharmacy as a reliable healthcare facility they can refer to within the primary care setting. Mutual knowledge of patients' needs and pharmacists' services, relevant to cancer care, may also foster a trustful relationship between the pharmacist and patient, which ultimately provides the patient with a sense of empowerment as well as commitment (e.g., adherence) to the prescribed cancer therapy. Efforts, led by patients' organizations in collaboration with pharmacists' organizations, could improve accessibility and encourage pharmacists to seek alternative ways to reach patients that extend beyond the four walls of a pharmacy. The core competencies and best practices in cancer care that could improve the relationship between patients and oncology pharmacists as identified by the experts during the panel discussion are presented in Table 2.

6.3. Improving Interactions With the Other Components of the Oncology Care Team. Collaboration in healthcare requires providers to work more closely together to achieve effective integration of services and improved patient outcomes. Important drivers for the integration of cancer services are recognition of the responsibilities and tasks each provider has shared informatics systems, quality of services, and improved patient experience.

TABLE 2: Community pharmacists core competencies and pharmacy services that patients with cancer wish for to optimize provision of their cancer care as identified by the experts during the panel discussion.

<i>Core competencies</i>
Basic knowledge of cancer biology, including hematological and immunological processes, and the patient with cancer' clinical profile (e.g., sensitivity to steroids, fatigue, and loss of appetite)
Expertise in managing anticancer agent-related adverse events (e.g., nausea, vomiting, and skin issues) and cancer-associated issues including pain
Expertise in managing patients with cancer and comorbidities
Expertise in counseling patients with cancer and caregivers on:
• Appropriate methods for proper administration and mitigate medication dosing errors • Appropriate methods to handle and dispose of hazardous anticancer agents • Benefits of vaccination to prevent infections • Nutritional needs during cancer therapy and the appropriate use of supplements
Ability to engage in conversation with patients and caregivers on survivorship
Expertise in managing adherence to prescribed anticancer agents to prevent issues
<i>Pharmacy services</i>
Smoking cessation services
Patient education on medication posology, expected adverse events, and adherence
Vaccine administration (flu, HPV, and HBV)
Counseling patients with cancer about:
• Methods of drug self-injection, • Opportunity for referral to a specialist/psycho-oncologist to manage cancer therapy-associated psychiatric issues such as depression and anxiety • Lifestyle intervention and recognition of suspected cancer red flag symptoms.

TABLE 3: Actionable suggestions as developed during the panel discussion.

The complexity of cancer care demands collaborative care pathways, effective interactions within the interprofessional care teams, and patients and survivors empowered in self-management.
Efforts should be made to act on current disparities in access to cancer treatment, including psycho-oncological support, and on unmet patient needs including deficiencies in accurate, up-to-date information that is patient accessible.
With the increase in orally administered anticancer agents, primary care is an outpatient setting and the value of the proximity of community pharmacies should be better exploited.
A well-trained and empathic pharmacist, confident in providing counseling to cancer patients, regardless of whether they are directly dispensing oral anticancer agents, and able to devote time to support patients throughout the cancer journey could be easily identified as trustful source of information by the patients and is likely to be regarded as a cancer patients' ally.
Mutual knowledge of cancer patients' needs and pharmacists' services facilitates the patient-pharmacist relationship which ultimately provides the patient with a sense of empowerment as well as commitment (e.g., adherence) to the prescribed anticancer therapy
Educational programmes, organized in partnership with institutional bodies such as the European Society of Medical Oncology (ESMO), Federation International Pharmaceutical (FIP), Pharmaceutical Group of the European Union (PGEU), and cancer patients' organizations, may benefit community pharmacists not only with updated scientific evidence supporting anticancer therapy but also with competencies and tools to better interact with patients
In the context of limited resources and alarming workforce shortage in cancer care, it may be relevant to invest in public health interventions that make use of the proximity and equitable accessibility of pharmacies. Community pharmacists may well represent the healthcare liaison that brings patients with cancer closer to their healthcare providers and increases access and equity of provision of care.

Initiatives that aid information flow between care providers such as decision-support systems and patient information systems as well as strategies that improve information transfer between patients and providers, such as the patient-held health records, are the key to optimizing cancer care. For instance, granting community pharmacists access to relevant health information on patients and the list of medications they are taking could facilitate their interaction not only with the patient but also with the oncologist/hematologist, general practitioner, and the hospital pharmacist. Cancer care is one of the major disease areas that could benefit from the European Digital Strategy thanks to better exploitation of real-world data using powerful tools such as artificial intelligence (AI) and high-performance computing. Despite this, barriers persist around interoperability,

legal and ethical standards, governance, cybersecurity, technical requirements, and compliance with personal data protection rules [3, 29]. The use of digital health solutions including AI tools can make pharmacy processes more efficient, making it easier to implement added-value services and allowing community pharmacies to follow up with at-risk patients, such as patients with cancer, and monitor their progress during therapy. If pharmacists are increasingly perceived as fully integrated in the cancer care network, the patients would feel even more that they are at the center of a multiprofessional care that is organized around, and responsive to, their human needs.

Addressing the needs of patients with cancer has to be a shared political, operational, and scientific priority. Therefore, implementing interventions to facilitate the

integration of community pharmacists in the cancer care network requires efforts at the institutional level and funding research programmes aimed at developing best practice models using the EPIC initiative as a template.

7. Conclusions

Despite the fast-paced progress in the oncology therapies with the introduction of biologicals, immunotherapy, and personalized medicines, cancer remains the top contributor to mortality in the EU. Prominent disparities in access to treatment (including psycho-oncological support and pharmaceutical care) between and within European countries currently hinder an equitable and adequate cancer care provision [14, 15]. Collaborative care models, proximity of providers, and fruitful interactions within the cancer care network are required to tackle the complexity of cancer care. Proximity would allow patients with cancer to see multiple specialists on the same day, thereby reducing the time to treatment. Proximity would also facilitate communication among providers and ultimately the relationship with the patients [40]. Although telemedicine and telepharmacy are recently emerging as powerful solutions to facilitate communication between patients and healthcare providers thanks to greater access to comprehensive electronic patient records, proximity is still an added value for cancer care.

In recent decades, the pharmacy profession has experienced a shift from a product-oriented practice (dispensing medications) to a patient-centered practice [21]. As a result, pharmacists have been increasingly recognized as being well positioned to promote health and educate patients about their diseases and the appropriate use of prescribed medicines [22]. Although hospital pharmacists are acknowledged members of cancer care teams, community pharmacists are an untapped health resource, not fully integrated into the cancer care network, and often perceived as mere drug sellers rather than potential cancer patient allies [10]. Interventions to facilitate their integration into cancer care to improve their public image and establish regulatory frameworks to maximize the value of the highly accessible community pharmacies network to the communities they serve are urgently needed.

Here, we provide actionable suggestions to take advantage of pharmacists' role as drugs' experts to address the existing knowledge gap regarding community pharmacies and to foster fruitful partnerships among scientific societies, patients' and pharmacists' organizations with the final aim of optimizing cancer care. We feel that our insights are particularly valuable because they encompass the perspectives of different components of the cancer care network including patients, physicians, hospital, and community pharmacists and institutions (Table 3).

In conclusion, we believe that the role of community pharmacists could be regarded as an important policy lever that European countries could pursue to provide wider preventive cancer care provision and better cancer patient and survivor management.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Disclosure

The opinions expressed in this article are those of the authors.

Conflicts of Interest

The authors declare no conflicts of interest.

Author Contributions

All the authors made substantial contributions to the conception of the work and revised it critically for important intellectual content. All the authors approved the final version of the manuscript and agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section. (*Supporting Information*)

Table S1: The experts who took part in the panel discussion.

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