

CONFERENCE ABSTRACTS

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Community pharmacy

Ensuring patient-centred care beyond compliance

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Background: Pharmacists base safe practice on regulatory compliance, yet evolving patient needs increasingly require the exercise of professional judgement beyond these standards.

Objective: To identify patient needs and develop strategies to overcome challenges in meeting these needs.

Method: An anonymised online questionnaire to gather pharmacist insights was developed. Focus group discussions involving two community pharmacists, one hospital pharmacist, one academic pharmacist, one regulatory pharmacist and one layperson were conducted to validate the questionnaire and clarify concepts such as 'going beyond the call of duty' in pharmacy practice. Thematic analysis was performed on qualitative data gathered. The 'Pharmacist Perspective on Patient Needs Questionnaire' was disseminated online to pharmacists. The questionnaire gathered quantitative and qualitative insights into the regulatory, professional, and service-related barriers faced. Ten case studies and relevant patient-centred strategies were designed based on questionnaire and focus group insights. Validation of these cases was done through a focus group session.

Results: Thematic analysis identified four main themes with corresponding sub-themes: Going Beyond the Call of Duty, Barriers to Going Beyond the Call of Duty, Regulations and Sustainability. Among the pharmacists surveyed (N=39), the

three most frequently encountered patient needs were: polypharmacy (n=30), low health literacy (n=27) and care coordination (n=24). Frequency ratings across the 14 identified patient needs differed significantly (Friedman Test, $p < 0.001$). Kruskal Wallis tests revealed that professional role was found to significantly influence the frequency of encountering low health literacy ($p = 0.030$), financial constraints ($p = 0.013$), and post discharge support ($p = 0.024$). Years of experience significantly affected frequency ratings for financial constraints ($p = 0.018$) and care coordination ($p = 0.021$). When describing actions that 'go beyond the call of duty' four pharmacists provided no specific examples, characterising such efforts as either too frequent to recall or a fundamental part of practice. Inductive content analysis of the remaining responses (n=35) identified five categories of support: medication access (n=11), medication management support (n=9), emotional support (n=9), practical support (n=2), and patient advocacy (n=3). The ten case studies were organised into four sections: Scenario outlining the patient need, Practice Challenges describing the pharmacist's difficulties, Thematic Links connecting the case to the study's themes, and Resolutions detailing both immediate pharmacist actions and broader systemic actions. The cases addressed continuity of care gaps, adherence support for patients with literacy barriers, non-formulary prescription that a patient cannot afford, emotional distress, conflicting prescriber instructions, medication shortages, extended opening hours, support for foreigners, prescription support following bereavement and financial constraints.

Conclusion: Pharmacists go beyond their duties by providing care that extends past regulatory expectations and centres on the patient's wellbeing. The cases illustrate the challenges of sustaining this approach by presenting realistic, practice-based scenarios in which pharmacists navigate complex patient needs within routine constraints.

Screening for risk factors and symptoms of chronic venous disease in community pharmacy: Contribution of pharmaceutical intervention to early detection

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Background: Chronic venous disease is a common condition affecting a significant proportion of the adult population and has a considerable impact on patients' quality of life. In Portugal, it is estimated that approximately 35% of the population is affected, with a higher prevalence among women over the age of 30. In addition to its clinical manifestations, the disease may contribute to functional limitations, work absenteeism and reduced productivity. Due to their accessibility and proximity to the population, community pharmacies represent an important setting for health literacy promotion, identification of risk factors and early detection of signs and symptoms associated with venous disease.

Objective: To identify risk factors, associated symptoms and the probability of developing chronic venous disease among community pharmacy users through an awareness initiative and venous insufficiency screening.

Method: During July 2025, an initiative was carried out in community pharmacies with the aim of raising awareness of chronic venous disease and identifying individuals with risk factors or symptoms suggestive of the condition. The intervention included awareness activities and venous insufficiency screening conducted through the application of a structured questionnaire to pharmacy users. The questionnaire collected information on age, gender, family history, pregnancy history, use of hormonal contraceptives and lifestyle habits. Symptoms associated with venous disease were also assessed, including sensation of heavy legs, ankle oedema and aggravating factors, as well as the presence of varicose veins or other clinical manifestations. Data were collected using a digital form (Formsapp®) and analysed using Microsoft Excel®. A total of 100 community pharmacies participated in this initiative.

Results: A total of 4,758 individuals were assessed through the screening carried out in participating pharmacies. Among participants, 72% were female and 48% were aged between 35 and 50 years. Approximately 65% reported a family history of venous disease. Regarding risk factors, 49% reported at least one pregnancy and 31% indicated the use of hormonal contraceptive methods. Additionally, 35% considered that they did not have a healthy lifestyle. In their daily or professional activities, 32% reported remaining seated or standing for at least eight hours per day, while 40% reported periods between four and eight hours. Furthermore, 57% of

participants were overweight. In terms of symptoms, 85% reported frequently experiencing heavy legs and 28% identified hot weather as an aggravating factor. Regarding the impact on quality of life, 61% reported a high impact, 26% a moderate impact and 13% a low impact. Among individuals without a previous diagnosis of venous disease, risk assessment showed that 18% had a low risk of developing the condition, 59% had moderate risk and 23% had a high risk. Participants classified as high risk were referred for medical evaluation.

Conclusion: The high prevalence of risk factors and symptoms associated with venous disease observed in this population highlights the importance of early detection. Community pharmacies can play an important role in identifying individuals at risk and referring them for clinical assessment. Structured screening initiatives in this setting may contribute to a more preventive approach and improved management of chronic venous disease.

Community pharmacy as a gateway for obesity management: Impact of pharmaceutical intervention on patient motivation

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Background: Obesity is one of the major public health challenges and is recognised as a complex chronic disease and an important risk factor for several conditions, including cardiovascular diseases, type 2 diabetes mellitus and other metabolic disorders. Effective management requires integrated strategies involving different healthcare professionals and promoting healthier lifestyles. Due to their accessibility and proximity to the population, community pharmacies are well positioned to identify individuals with overweight or obesity and to promote awareness, motivation and referral for medical follow-up.

Objective: To assess the prevalence of overweight and obesity among community pharmacy users and evaluate the impact of pharmaceutical intervention on patient motivation to initiate or reinforce weight management strategies and seek medical follow-up.

Method: Between March and April 2025, an initiative was carried out in community pharmacies aimed at identifying individuals with overweight or obesity and raising awareness about weight management. The intervention included prior training of pharmacy professionals regarding obesity management and awareness activities directed at the population through informational materials available in participating pharmacies. Anthropometric assessment was

conducted, including measurement of weight, height, waist circumference and calculation of body mass index (BMI). A structured questionnaire was also applied to collect information on comorbidities associated with excess weight, previous weight-loss strategies, existence of medical follow-up and level of motivation for obesity management. Whenever overweight or obesity without adequate medical follow-up was identified, individuals were referred for medical consultation through the digital tool “Find Your Doctor”, which allows healthcare professionals to be located according to specialty and geographic location. Data were collected using a digital form (Formsapp®) and analysed using Microsoft Excel®. The initiative involved 100 community pharmacies.

Results: The initiative involved 9,056 participants, of whom 71% were female, with the highest prevalence observed in the 45–60 year age group. Regarding nutritional status, 45% of individuals presented pre-obesity (BMI 25–29 kg/m²) and 20% obesity (BMI ≥30 kg/m²). Concerning waist circumference, 60% of women presented values above 80 cm, and 61% of participants had at least one comorbidity associated with excess weight. Among individuals with overweight or obesity, 72% reported not having medical follow-up or a structured weight management plan. Among individuals with obesity, obesity class I, II and III were observed in 30%, 12% and 10%, respectively. Among participants with an ongoing treatment plan, 70% reported not receiving structured support for weight management. Following motivational pharmaceutical intervention, 51% of individuals with pre-obesity or obesity without follow-up expressed interest in initiating a treatment plan, and 45% reported intention to start medical follow-up, being directed through the “Find Your Doctor” tool. Motivation for obesity management increased overall following the pharmaceutical intervention.

Conclusion: Community pharmacies can play an important role in identifying individuals with overweight or obesity, promoting motivation for weight management and facilitating referral for medical follow-up. The use of digital referral tools such as “Find Your Doctor” may improve patient access to appropriate healthcare professionals and strengthen the integration of community pharmacies within the healthcare pathway and the management of chronic diseases. Thematic area: Community pharmacy

Community pharmacy in migraine detection: Impact of pharmaceutical intervention on disease awareness and quality of life

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Background: Migraine is one of the most prevalent neurological disorders worldwide and a major cause of disability and reduced quality of life. It is estimated to affect approximately 5–8% of men and 15–20% of women. In Portugal, around 2.1 million people are estimated to suffer from migraine. Beyond acute attacks, migraine may also have a significant impact between episodes, known as the interictal burden, affecting emotional wellbeing, productivity and functional capacity. Due to their accessibility and proximity to the population, community pharmacies are well positioned to promote health literacy, identify suggestive symptoms and support patients in the management of this condition.

Objective: To assess the impact of pharmaceutical intervention on patients’ knowledge and perception of migraine, as well as on the recognition of interictal burden and its impact on daily quality of life.

Method: The study was conducted during November 2025 and involved two main interventions in community pharmacy. The first intervention focused on promoting health literacy regarding migraine, including information on symptoms, potential triggers and the impact of the disease on daily life. The second intervention consisted of administering a structured questionnaire to assess migraine-related symptoms and the interictal impact of the disease on patients’ daily activities. Data were collected through a digital form and analysed using Microsoft Excel®. The initiative involved 100 community pharmacies.

Results: The initiative involved 4,062 participants, predominantly female (68%). The most represented age group was 36–50 years (37%), followed by 18–35 years (31%) and individuals over 50 years (29%). Regarding clinical characterisation, 32% of participants reported nausea, vomiting or gastric discomfort associated with migraine attacks, while 37% reported photophobia. Approximately 40% indicated that headaches limited their ability to work, study or perform daily activities for at least one day. Assessment of the interictal burden showed a relevant impact on quality of life, with 42% reporting severe impact, 26% moderate impact, 21% mild impact and 12% minimal impact, indicating that 68% experience moderate to severe impact. Significant functional impact was also observed, with 75% reporting impaired concentration and productivity, interference with daily activities and limitations in planning personal and professional life, while 50% reported emotional

impact. Based on the screening criteria applied, approximately 55% of participants progressed to a second phase of pharmaceutical intervention due to symptoms suggestive of migraine. Among participants without a previous diagnosis, 22% were referred for medical evaluation. Following the pharmaceutical intervention, 52% of participants reported improvement in their knowledge and perception of migraine, of whom 20% reported moderate to very significant improvement. Approximately 36% reported no change, while the remaining participants reported slight improvements.

Conclusion: Migraine significantly affects patients' functionality and quality of life, not only during attacks but also during the interictal period. Pharmaceutical intervention improved patients' knowledge and perception of the disease and helped identify suspected cases requiring medical evaluation. These findings reinforce the role of community pharmacy as an important point of contact for the detection, education and support of people living with migraine.

Enhancing lower back pain management: The role of pharmaceutical care in symptomatic treatment

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Background: Lower back pain (LBP) is one of the most common reasons for seeking medical care worldwide and it represents a public health concern. According to the World Health Organisation, LBP is a leading cause of disability and reduced quality of life among adults, affecting 619 million people in 2020, a figure expected to rise to 843 million by 2050. Effective management often requires a multidisciplinary approach involving both pharmacological and non-pharmacological strategies. Pharmaceutical care plays a critical role in ensuring the rational use of medicines, improving therapeutic outcomes, and promoting responsible self-medication. Clinical pharmacists are well-positioned to educate patients about the appropriate use of medicine, potential adverse effects, and adherence to treatment regimens. In the symptomatic management of LBP, non-steroidal anti-inflammatory drugs (NSAIDs) remain one of the most commonly used pharmacological options. However, inappropriate use, including concurrent administration of multiple NSAIDs, may increase the risk of adverse drug reactions. Therefore, evaluating the contribution of pharmaceutical care to rational pharmacotherapy in LBP management is essential.

Method: A cross-sectional survey was conducted among 60 patients presenting with acute mechanical lower back pain between June and August 2024. Participants were recruited at a community pharmacy when seeking pain-relief advice; cases were also reviewed during outpatient trauma and neurology consultations, with referrals to specialists including gastroenterologists and gynaecologists, as needed. Patients with red-flag symptoms such as fracture, tumour, spinal stenosis, spondylolisthesis, infection, and cauda equina syndrome were excluded. Data were collected using a structured questionnaire that captured socio-demographic and clinical-anamnestic data, risk factors, and details of prescribed pharmacotherapy. Functional status and the impact of pain on daily activities were assessed using the Roland–Morris Disability Questionnaire (RMDQ), a validated tool for evaluating disability associated with lumbar pain.

Results: Among the respondents, people of working age dominated. The mean age of the patients was 44.5 ± 2.61 years. A third of the surveyed patients indicated a significant effect of pain in the lumbar area based on the RMDQ. A third of the surveyed patients marked more than 7 items on the questionnaire. Regarding treatment guidance, 50% of patients reported receiving information from physicians, while 36.6% obtained guidance from pharmacists. NSAIDs were the most frequently used medications for symptomatic relief, administered in oral tablet form and often combined with topical NSAID preparations. Notably, one-third of patients reported the simultaneous use of multiple NSAIDs, and some patients reported concomitant use of corticosteroids. Reported adverse effects included dyspepsia, abdominal pain, pruritus, and dry skin.

Conclusion: Given the high prevalence of LBP and frequent use of analgesics, pharmacists are integral to ensuring safe and effective pain management. Comprehensive pharmaceutical care that includes patient education, medication review, and collaboration with physicians and other specialists is important to optimise treatment regimens, prevent inappropriate polypharmacy, and mitigate adverse effects. These results highlight why it is vital to have pharmacists as part of a multidisciplinary team for LBP as it's a clear way to improve patient outcomes and safety.

Adaptation and socio-psychological climate among pharmaceutical specialists: a survey-based analysis

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Background: The successful adaptation of pharmaceutical specialists is a multidimensional process that influences both operational stability and employee retention. In the context

of staff shortages, high turnover, and increasing psychosocial risks in healthcare, the ability of pharmacy organizations to ensure effective workplace adaptation becomes a key driver of service quality and business continuity. Many pharmacy chains invest in corporate standards, mission statements, and value systems, yet do not systematically assess how well these elements are understood and accepted by employees at different organizational levels. Successful adaptation therefore depends not only on professional competence, but also on alignment with the corporate mission and the quality of internal communication, including both formal and informal feedback channels. This study evaluates organizational awareness, feedback mechanisms, and the socio-psychological climate within a pharmacy chain to identify barriers to effective workplace adaptation.

Method: A cross-sectional survey was conducted between November 2025 and January 2026, involving 334 employees of a pharmacy chain. The cohort was predominantly female (87%), with a balanced age distribution: 20–29 (24%), 30–39 (28%), 40–49 (22%), and over 50 years (26%). Regarding tenure, 39% had over three years of experience in their current role, while 8% had less than one year. Administrative personnel represented 18% of the sample. Data were processed using statistical and structural-logical analysis to evaluate corporate alignment, feedback quality, and team dynamics.

Results: Organizational awareness showed moderate levels of alignment, with 64% of respondents able to formulate the company mission and 62% able to list core values. A significant communication gap was detected: 73% of specialists reported “never” receiving feedback from management. Interestingly, 65% reported being “completely satisfied” with feedback quality, while 31% expressed partial satisfaction due to rare or uninformative interactions. The socio-psychological climate was generally perceived as positive. Most participants (58–60%) totally agreed that the atmosphere is friendly and that they feel integrated into the team (65%). Conflict resolution and consideration of employee opinions in decision-making were rated positively, with 54% and 47% total agreement, respectively. However, indicators of workplace strain were present; 31% of the workforce reported experiencing emotional burnout or stress, and a secondary metric indicated that 46% felt some level of team detachment.

Conclusion: The findings indicate that while pharmaceutical specialists generally perceive a supportive team environment, there is a systemic lack of formal feedback. The high reported satisfaction despite low feedback frequency suggests that employees may rely on peer-to-peer support or informal cues rather than structured managerial communication. Reducing burnout rates and improving the consistency of managerial feedback are essential steps to enhance long-term adaptation and psychological well-being in the pharmaceutical workforce. For pharmacy management, these results highlight the need to institutionalize regular feedback routines, mentoring and one-to-one meetings, as well as targeted interventions to

monitor early signs of detachment and support newly hired staff. Such measures can strengthen retention, improve employer image, and enhance the overall resilience of pharmacy organizations in a competitive labour market.

Developing a comprehensive assessment tool for sustainable pharmacy management

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Background: This research is particularly relevant as pharmacy organizations worldwide are rethinking traditional management models and seeking integrated approaches that simultaneously address financial performance, workforce sustainability, and their broader social responsibility in healthcare delivery. Pharmacy managers are currently operating in a high-pressure environment characterized by a global workforce shortage and rising operational costs. Recent PubMed-indexed data indicates that 61% to 75% of pharmacists report significant occupational burnout, often driven by ‘Metric-Driven Professionalism’—a management approach where commercial Key Performance Indicators (KPIs) conflict with clinical duties. With the financial impact of staff turnover reaching up to 200% of an employee's annual salary, pharmacy leadership requires evidence-based tools to balance profitability with staff wellbeing and the emerging requirements of Environmental, Social, and Governance (ESG) standards. This study presents a diagnostic survey instrument designed specifically for pharmacy managers to audit these critical operational dimensions.

Method: The assessment tool was developed through a systematic literature search and synthesis of pharmacy-specific management frameworks. Research was conducted using PubMed, Scopus, and international professional databases, focusing on ‘pharmacy leadership’, ‘pharmacist retention’, and ‘pharmaceutical corporate social responsibility’. The methodology synthesized three core frameworks: the Balanced Scorecard (BSC) adapted for community pharmacy; the Job Demands-Resources (JD-R) model for healthcare burnout; and the International Pharmaceutical Federation (FIP) Development Goals. These were used to identify the variables most relevant to pharmacy managers, which were then translated into a practical 26-item audit instrument.

Results: The resulting survey is structured into six management blocks. Blocks 1 and 2 establish organizational baselines and turnover rates. Blocks 3 and 4 allow managers to audit the formalization of KPI systems and the ratio of variable remuneration, identifying the ‘stress threshold’ where financial incentives lead to attrition. Block 5 (Retention

and Ethics) evaluates the use of pharmacy-specific feedback loops, such as 'one-to-one' sessions and ethical dismissal protocols. Block 6 (Sustainability) audits the adoption of 'Green Pharmacy' initiatives, including digital QR-code instructions to reduce paper waste and the management of non-proprietary expired medication disposal. The tool provides a structured output that enables managers to correlate aggressive sales targets with actual staff stability and professional satisfaction.

Conclusion: The developed instrument provides pharmacy managers with a robust framework to transition from traditional administrative oversight to 'Sustainable HRM'. By synthesizing global healthcare management theories into an actionable survey, this research allows for the identification of systemic risks related to burnout and professional dissatisfaction. For pharmaceutical organizations, the application of this tool is not only a strategic necessity to reduce recruitment costs and enhance the employer brand, but also a means of strengthening organizational resilience, maintaining staff continuity, and safeguarding the quality and social value of pharmaceutical care delivered to patients and communities.

Implementation of pharmacist vaccination training in remote regions of Brazil: the CFF experience

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Background: The Federal Council of Pharmacy (CFF) developed a vaccination training program for pharmacists, offered in two editions (2023 and 2025). Yielding comprehensive nationwide results, the program conducted a total of 265 classes across all regions of Brazil, culminating in the successful certification of 6,110 pharmacists throughout the entire country. However, the state of Amazonas presents unique challenges due to its geographical characteristics, including climate-related barriers (droughts and floods), geographic isolation of municipalities, and long distances from the capital, which limit access to training opportunities for pharmacists in remote areas.

Objective: To describe the challenges and strategies involved in delivering vaccination training in remote areas of the Amazonas state.

Method: This study is an experience report conducted by the Federal Council of Pharmacy (CFF), describing the planning, implementation, and evaluation of a pharmacist vaccination training program in remote areas of the Amazonas state, Brazil. The initiative was part of a national continuing professional development program delivered in two editions (2023 and 2025). The expansion to inland municipalities required logistical adaptations, with access primarily via river transport (boats or speedboats), involving journeys of up to 20 hours through the Amazon rainforest. The training followed a standardized curriculum combining theoretical and practical components, focused on immunization practices and the development of clinical competencies. The implementation team consisted of two vaccination specialists from southern and southeastern Brazil, supported by two additional staff members, and activities were carried out in collaboration with local health services. Data were obtained from program records, including number of participants, locations, and operational reports, as well as qualitative observations regarding the training process and participant profiles.

Results: In the first edition, four classes were held in the state capital, Manaus, certifying 93 pharmacists. In the second edition, the CFF expanded the program to remote municipalities, despite logistical challenges. Seven classes were conducted, including three in the capital and four in the interior of the state of Amazonas, resulting in 190 certified pharmacists. These inland municipalities included Tefé, Itacoatiara, Manacapuru, and Tabatinga. A notable feature of the program was the diversity of participants, reflecting varied professional and cultural backgrounds. These included Brazilian Army pharmacists working in remote jungle settings, pharmacists involved in immunization of Indigenous populations, Indigenous pharmacists who communicate in local languages and play a key role in community-based vaccination, and professionals engaged in immunization efforts in border regions with Peru and Colombia.

Conclusion: The reported experience demonstrates that vaccination training extends beyond technical instruction, encompassing clinical, social, ethical, and cultural dimensions of pharmaceutical care. These findings reinforce the strategic role of pharmacists in expanding immunization services and highlight the commitment of the CFF to adapt training initiatives to Brazil's regional diversity, supporting future program expansion.

One Health in action: The strategic role of the Federal Council of Pharmacy in shaping Brazil's National Action Plan

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Background: Brazil has made significant progress in institutionalizing integrated approaches that encompass human, animal, plant, and environmental health. In this context, the Federal Council of Pharmacy (CFF) is a member of the Interinstitutional Technical Committee on One Health, established by the Brazilian Presidential Decree n. 12,007/2024. The CFF is part of a strategic group of 20 member institutions, which includes eight ministries (such as Health, Agriculture and Livestock, and Environment and Climate Change), seven linked entities (including Anvisa, Fiocruz, and Embrapa), and five professional councils (including the CFF, CFBio, Cofen, CFM, and CFMV). These institutions are responsible for collectively developing, monitoring, and reviewing Brazil's National One Health Action Plan 2026–2040. This report describes the experience and the active role of the CFF as a key contributor to the development of this national strategic framework. **Methodology:** The methodology adopted for the development of Brazil's plan was based on the axes of the Quadripartite Joint Action Plan (WHO, WOA, FAO, and UNEP), adapted to the Brazilian context through the creation of seven thematic working groups.

Method:

Results: Within this collective national effort, the CFF was represented by expert pharmacists and specialists from various fields, whose participation was marked by leadership and rapporteur roles in specific thematic subgroups. In Action Line 1 (Strengthening institutional capacities to implement the One Health approach), an expert pharmacist representing the CFF served as Vice-Coordinator. In Action Line 5 (Addressing Antimicrobial Resistance – AMR), a key area for the profession, the CFF assumed both Vice-Coordination and Rapporteur responsibilities through the work of pharmaceutical specialists. These expert pharmacists play a cross-cutting role, actively contributing their advanced technical knowledge to all action lines within Brazil's One Health framework. Related events and validation: The national plan's development process was highly collaborative. Between October and November 2024, more than 40 virtual meetings were held among the institutions. To consolidate proposals, the CFF participated in the One Health Technical-Scientific and Social Workshop, held at Embrapa headquarters in Brasília, which applied the "World Café" methodology for discussion and validation of actions. Additionally, the topic and Brazil's National Strategy were addressed in major scientific events, including the 60th

Congress of the Brazilian Society of Tropical Medicine and the UK–Brazil International One Health Symposium 2025 at the University of Brasília. The process culminated in the submission of the strategic version for public consultation on the Brazilian Participa+Brasil platform in 2025, further enhancing stakeholder engagement.

Conclusion: The collaboratively developed National One Health Action Plan highlights the essential role of pharmacists across all its axes in Brazil. Their contribution is transversal, encompassing health system management, food safety, environmental monitoring, and, notably, the fight against antimicrobial resistance. The technical and institutional engagement of the CFF ensured that pharmaceutical expertise was successfully incorporated into the country's public health policies. As a result, Brazil's National Plan has been validated and approved by all member institutions of the interinstitutional Technical Committee, representing a significant milestone for integrated health in the country.

Pediatric health education program: promoting healthy lifestyles and the rational use of medicines (2020-2026)

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Background: The Pediatric Health Education Program (Cacilda, Saúde e Cia) was created by the Brazilian Drug Information Center of the Brazilian Federal Council of Pharmacy. It promotes healthy lifestyles and safe medicine use among school-age children to prevent poisoning, considering their vulnerability to home and media influences. The program aligns with World Health Organization/United Nations Educational, Scientific and Cultural Organization standards for health-promoting schools and Ministry of Health recommendations for the Health at School Program.

Objective: To educate children (ages 7 to under 12) on nutrition, oral health, immunization, pet care, and medicine safety. It also trains pharmacists and other professionals as educators, using child-friendly language.

Method: A multidisciplinary team of volunteers-including pharmacists, doctors, dentists, veterinarians, nutritionists, pedagogues, and students-delivers the program. The core strategy is "scientific clowning"; through the character "Cacilda"; who represents a child. Tools include a theme song, puppet theater, giant capsules, and adapted materials; additional characters like Capsuleka® were also developed. A feasibility study (2020-2021) evaluated knowledge before and after interventions, with ethics committee approval. Between 2022-2025, the programa expanded from Brasília to other cities, such as Caxias do Sul.

Results: Children showed increased knowledge and became proactive in influencing family health habits. The program led to the publication of books like SOS, The Corona is here!, Bê-á-bá da Saúde and a Multiprofessional guide for professionals, and a scientific article in *Ricerca & Pratica*. Audiovisual content is available on "TV Cacilda"; via the official blog. Participant feedback was positive, highlighting multiprofessional collaboration and playful tools. For 2026, the program plans for national expansion as "Pharmaceutical Assistance in Pediatrics"; and participation in federal policy formulation.

Conclusion: The Pediatric Health Education Program demonstrates that pharmaceutical intervention within a multidisciplinary team using ludic methods is effective in forming healthy habits and strengthening the pharmacist's role in public health.

A fun way to educate for health: contributions of the pharmacist and the pedagogue

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Background: Health education must consider ethical aspects regarding the target audience, their guardians, the participating institution, and specific audience characteristics. To innovate, new ludic tools, educational or invitation videos, and new characters are created annually. Multiprofessional collaboration is desirable, involving professionals like pharmacists and pedagogues.

Objective: To promote ethical, fun, and creative strategies for presenting content to children, emphasizing correct behaviors.

Method: When in-person meetings are limited, interventions remain face-to-face, while invitations can be virtual. Video recordings are encouraged for educational materials on the "Cacilda, Saúde e Cia" blog or to cover team absences and costume changes. Content and presentations must be ethical, benefiting children without causing harm such as embarrassment. Educational technologies are validated based on user needs to facilitate learning and improve quality of life.

Results: Videos were produced to invite students, outlining program goals and dates. These feature short plays with characters to engage children, followed by a coordinator's invitation. Educational videos on immunization, rational use of medicines, and hand hygiene were screened during

sessions and posted on the blog. Children's testimonies revealed self-medication and improper home storage of medicines. To address this, the character Xaropildo® was created to promote safety and prevent poisoning. Xaropildo® is rational, corrects the main character (clown Cacilda) on medicine-related issues, and advises parents on proper storage. Humorous theater engages children by prompting them to question the character's advice.

Conclusion: Principles for persuasive, face-to-face childhood education include ludic characters and fun videos. These strategies use simple, humorous language to capture attention, promote positive attitudes, foster critical awareness, satisfaction, and rational use of medicines.

Applying a pharmacist recommended medicine categorisation framework

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Evidence based processes to categorise medicines that are suitable to be considered for pharmacist recommendation in order to promote safe access to medicines. A score-based framework was developed to categorise medicines according to three categories: Category 1 May be considered as Pharmacist Recommended Medicines (PRM) (67%-100%), Category 2 May be considered as PRMs with strict guidelines, and Category 3: Shall only be recommended by physician. The aim was to apply a pre-developed structured framework to categorise feasibility of medicines to be made available as PRMs.

A comprehensive list of all medicines authorised for use in Malta was retrieved from the Malta Medicines Authority database. This dataset was systematically filtered to exclude paediatric only formulations, intravenous preparations, and medicines primarily indicated for chronic conditions, as these were outside the scope of the intended assessment. The refined dataset was then categorised into three distinct groups: (i) medicines already licensed as pharmacist recommended medicines (PRMs), (ii) prescription only medicines (POMs) with direct over the counter (OTC) equivalents, and (iii) POMs without direct OTC equivalents. To verify real world market availability, all products within these lists were cross checked across two independent community pharmacies. Medicines identified as discontinued or no longer commercially available were removed to ensure the lists reflected the current Maltese market landscape. Two medicines from each of the three lists were randomly selected using an online randomisation tool for subsequent evaluation through the developed framework. The six identified medicines were appraised using the pre-developed framework to determine their PRM category.

The two licensed PRM products (i) selected were levonorgestrel 1500 micrograms film coated tablets and sildenafil 50 mg film coated tablets. The two POMs with direct OTC equivalents (ii) were naproxen 500 mg gastro resistant tablets and betamethasone 0.1% w/w cream, while the two POMs without direct OTC equivalents (ii) were chloramphenicol 1% w/w eye ointment and nitrofurantoin 50 mg hard capsules. According to the framework, 4 of the 6 medicines scored between 68%-80% and were classified as Category 1. The mean score for the category 1 medicines was: 275 out of 300 for patient safety, 78 out of 100 for access to medicines, 164 out of 200 for overall cost to patient and the healthcare system, and 78 out of 600 for threats to patient. The remaining 2, sildenafil 50mg and chloramphenicol 1%, were classified as Category 2 (46%-66%). The mean scores obtained by the category 2 medicines were 233 out of 300 for patient safety, 86 out of 100 for access to medicines, 155 out of 200 for overall cost to patient and the healthcare system, and 138 out of 600 for threats to patient.

The framework was practical to be applied in a real-world scenario for the different groups of medicines. The framework identified the medicine that is currently licensed as a PRM with guidelines to retain the same status (category 2). The framework demonstrated sensitivity to differentiate current POM medicines between category 1 and category 2 mainly through the risk assessment inbuilt within the framework.

Development of a framework for pharmacist recommended medicines

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Improving access to medicines is widely recognised as a key factor for better patient outcomes, particularly within primary care settings where timely treatment is essential¹. The criteria used to determine which medicines are appropriate for pharmacist recommendation remain inconsistent and highly variable across jurisdictions. The aim was to design and validate a structured, evidence based framework which may be used to identify medicines that may be appropriately classified as pharmacist recommended medicines (PRMs).

A focus group discussion was conducted with eight healthcare professionals, comprising two regulatory pharmacists, two community pharmacists, two hospital pharmacists, and two general practitioners. This multidisciplinary group defined the framework's sections and domains, assigned relative weightings according to perceived impact on patient health, and developed the scoring equation used for PRM categorisation. Domain-specific options were identified through a targeted review of literature. Inclusion criteria for the literature included studies published in English, free full access, published between 2016-2026 and peer reviewed.

Another focus group composed of three subject-matter experts for each section of the framework was convened to determine the scores for each option. The resulting framework underwent face and content validation by five community pharmacists to ensure clarity, relevance, and practical applicability.

The final framework consisted of 34 domains distributed across four sections: (A) Patient Safety, (B) Access to Medicines, (C) Overall Cost to Patients and the Healthcare System, and (D) Overall Risk. Consensus was reached for 77 of the 122 scoring options, with most disagreements arising in Section A, where participants were unable to agree on 18 of the 38 options. For options without consensus, mean scores were applied to ensure balanced representation of all expert opinions. Each section was weighted according to its relative importance, and the weighted section scores were aggregated to generate an overall score. This score was then normalised against the score of a "ideal medicine." The ideal medicine was defined as a medicine which provides the maximum benefit, i.e. obtains maximum scores in section A (+300), section B (+100) and section C (+200), and has no threats with a zero score in section D (0). Based on the final value, each medicine was classified into one of three categories: 1) May be considered as PRM (67%-100%), 2) May be considered as PRM with guidelines (34%-66%), 3) Shall only be recommended by physicians (0%-33%).

This study provides a validated, structured framework to categorise pharmacist recommended medicines, integrating expert consensus, weighted scoring, and practical evaluation. Its application may support more consistent decision making, enhances access to medicines, reduce the burden on general practitioners and the healthcare system, and strengthen the pharmacist's role in improving patient outcomes within primary care.

Communication barriers and accessibility of pharmaceutical counseling for patients with hearing loss in community pharmacies: A questionnaire-based study CPS-014 - Communication Barriers and Accessibility of Pharmaceutical Counseling for Patients with Hearing Loss in Community Pharmacies: A Questionnaire-Based Study

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Background: Hearing loss may significantly affect patients' access to healthcare information and medication safety. Community pharmacists play a key role in providing medication counseling; however, communication barriers may reduce the effectiveness of pharmaceutical care for hearing-impaired individuals.

Objective: To assess communication experiences of patients with hearing loss in community pharmacies, including clarity of pharmacist-provided information, availability of communication aids, and perceived accessibility of pharmacy services.

Method: A prospective, non-invasive, anonymous questionnaire-based study was conducted among 41 patients with hearing impairment, including users of cochlear implants, hearing aids, and other hearing implants. The survey consisted of 14 questions and was distributed between March and April 2025.

Results: The largest age group was 18–44 years (43.90%). A substantial majority of respondents (92.7%) reported that they usually do not meet pharmacists who communicate using sign language. Most participants (75.61%) declared that they have an opportunity to ask additional questions during a pharmacy visit. However, 31.6% of respondents stated that pharmacist-provided information was understood only sometimes. Adaptation of medication information to hearing impairment needs was inconsistent: 53.66% reported that adapted information is provided only sometimes, and 24.39% stated that they never receive printed or graphic medication information. Almost 61% reported that pharmacies do not provide information about support options for hearing-impaired individuals.

Conclusion: Although many respondents reported generally positive interactions and opportunities for clarification, significant gaps remain in consistent implementation of accessible communication practices. Wider use of written and visual aids, verification of patient understanding, and improved visibility of support options may enhance medication safety and patient-centered pharmaceutical care.

Communication accessibility and pharmaceutical counseling for patients with hearing loss in community pharmacies - exploratory questionnaire-based study

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Background: Hearing loss may reduce access to healthcare information and increase the risk of medication-related problems. Community pharmacists provide essential counseling, yet communication barriers may limit the quality of pharmaceutical care for hearing-impaired patients. To assess the experiences of patients with hearing impairment regarding communication with pharmacists in community pharmacies, including understanding of provided information and availability of communication support.

Method: A prospective, anonymous questionnaire-based study was conducted among 41 respondents with hearing impairment. The survey included 17 items and was collected between March and June 2025. Descriptive statistics were reported as counts and percentages. Associations between categorical variables were evaluated using chi-square tests of independence or Fisher's exact test. Effect sizes were reported using Cramér's V.

Results: The largest age group was 18–44 years (43.90%, n=18). Pharmacists' communication skills were rated as high or very high by 56.09% of respondents (n=23). However, 51.20% (n=21) reported that pharmacists did not use communication aids adapted to hearing-impaired patients. Nearly half of respondents (46.34%, n=19) experienced communication difficulties at least occasionally. Medication information was not fully adapted in 78.00% of cases (no/partly yes; n=32). Sign language communication was rarely available (no: 92.70%, n=38). A trend was observed for the relationship between adapted medication information (Q8) and clear medication instructions (Q11) ($p=0.083$; Cramér's $V=0.317$).

Conclusion: Conclusion: Despite generally positive ratings of pharmacist communication skills, major gaps remain in accessibility and adaptation of counseling for hearing-impaired patients. Standardized use of written/visual aids and improved communication support may enhance medication safety.

Assessment of the usefulness and comprehensibility of postoperative materials for parents regarding pharmacotherapy after surgical ENT procedures: An anonymous questionnaire study with eye-tracking analysis

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Background: Proper preparation, dosing, and storage of medications following pediatric otorhinolaryngological procedures are essential for ensuring safe recovery. Educational materials (e.g., guides), particularly those incorporating visual elements (e.g., pictograms and tables), may facilitate caregivers' adherence to postoperative recommendations. To assess the usefulness and comprehensibility of a guide presenting fundamental principles of medication use after tonsillectomy, adenotonsillectomy and/or ear drainage, using an anonymous questionnaire survey supported by eye-tracking analysis.

Method: An anonymous questionnaire survey was conducted among respondents (N = 39), including an evaluation of educational materials using a 5-point Likert scale (1–5) and an assessment of pictogram comprehensibility (1–5). Internal consistency of the pictogram scale was examined using Cronbach's alpha. Additionally, an eye-tracking study was performed in 15 respondents, incorporating general parameters of visual activity, including the number of samples, fixations, and saccades. The study was approved by the Bioethics Committee.

Results: Respondents rated the materials as highly useful and comprehensible. The statement regarding the completeness of information achieved a mean score of 4.68 ± 0.62 . Elements supporting content reception were rated very highly, including text formatting (4.86 ± 0.35), dosing tables (4.81 ± 0.40), and pictograms (4.67 ± 0.62). The overall evaluation of pictograms was excellent (mean 4.80 ± 0.30), and the scale demonstrated high reliability (Cronbach's alpha = 0.914). In the eye-tracking study, the mean number of samples was $103,664 \pm 22,450$, the number of fixations was $57,241 \pm 20,534$, and the number of saccades was $6,650 \pm 1,537$, indicating substantial visual engagement while reviewing the guide content, as well as individual variability in perception and information-processing strategies.

Conclusion: The analyzed material was assessed as clear and highly useful. The findings indicate that pictograms and tables provide significant support in understanding postoperative recommendations. Eye-tracking data confirm active processing of the content by users, supporting the rationale for incorporating clear visual elements in patient and caregiver education.

Communication between a pharmacist and a patient with hearing loss in a community pharmacy – prospective, non-invasive questionnaire study

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Background: In an aging society, communication between the healthcare professional – pharmacist – and the patient is extremely important. The primary objective of this study was to assess, based on the results of a questionnaire-based survey, pharmacists' communication skills when interacting with patients experiencing hearing loss of varying severity. The secondary objective was to evaluate pharmacists' knowledge—derived from the collected responses—regarding the risk factors associated with hearing loss, including: comorbidities (e.g., diabetes, hypertension), pharmacotherapy involving ototoxic medications, patient age (e.g., age over 65 years).

Method: The study received approval from a bioethics committee. It was a prospective, anonymous, questionnaire-based study conducted among 130 pharmacists. The survey was distributed both online and in person (in printed form) and was targeted at pharmacists employed in community pharmacies. The questionnaire was distributed in two formats: printed (for in-person completion) and as an interactive online form. It contained 19 questions, 18 of

which were closed-ended, while the final question was open-ended. Among the 18 closed questions, 14 were single-choice and 4 were multiple-choice. The first group of questions (Questions 1–7 and Question 19) pertained to pharmacists' communication skills. The second group (Questions 8–10 and Question 16) focused on adverse drug reactions related to ototoxicity and pharmacists' knowledge of patient groups at increased risk for hearing loss. The third group (Questions 11–15 and Question 17) addressed educational materials (including training) and technologies that facilitate communication with individuals who are hard of hearing. The open-ended Question 18 asked participants to propose solutions to support and improve communication between pharmacists and hard-of-hearing patients in community pharmacy settings.

Results: findings from the 130 participating pharmacists indicate that the majority (52.3%) believe their current training has not adequately prepared them to work with hearing-impaired patients. One-third of respondents emphasized that information on adverse effects impacting hearing should be more clearly highlighted in materials provided by pharmacists, indicating the need for tailored communication regarding drugs with potential ototoxicity. A need for adaptation of educational materials to better suit hearing-impaired patients was also noted. A total of 49.2% of respondents rated their own communication skills with hearing-impaired patients as average, while approximately 28.5% rated them as poor.

Conclusion: Based on the collected data, pharmacists assess their communication skills with hearing-impaired patients as insufficient. They correctly identify medicinal products that may cause hearing loss as an adverse effect and are able to point out patient groups whose underlying conditions increase the risk of hearing impairment. However, deficiencies in education (particularly in soft skills), training, and access to materials or equipment that facilitate communication with hearing-impaired patients are identified as the main barriers and challenges to effective communication in community pharmacy settings.

Exploring Ghanaian pharmacists' role in veterinary pharmacotherapy: Opportunities and challenges

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Background: Pharmacists are increasingly recognised as key contributors to interdisciplinary healthcare delivery; however, their roles in veterinary pharmacotherapy remain poorly defined in many low- and middle-income countries, including Ghana. With the growing importance of animal

health, antimicrobial stewardship, and food safety, pharmacists possess transferable competencies that could strengthen veterinary medicine practice. This study explores Ghanaian pharmacists' perspectives on their roles in veterinary pharmacotherapy, focusing on their awareness, perceived responsibilities, and the structural factors influencing their participation.

Method: A qualitative phenomenological design was employed to capture pharmacists' lived experiences and perceptions regarding veterinary pharmacotherapy. Fifteen pharmacists were purposively selected across diverse geographic regions and practice settings in Ghana, including community, hospital, and industrial pharmacy practice. Data were collected through semi-structured interviews that explored participants' awareness of veterinary pharmacology, perceived professional roles, training experiences, and barriers to practice. Interviews were audio-recorded, transcribed verbatim, and analysed thematically using Braun and Clarke's six-step analytical framework. NVivo version 12 qualitative data analysis software was used to support data organisation, coding, and theme development.

Results: The findings reveal that Ghanaian pharmacists face multiple interrelated barriers that significantly limit their involvement in veterinary pharmacotherapy. A central and recurrent theme was the absence of veterinary pharmacology within pharmacy education curricula, which contributed to low awareness, limited competence, and reduced professional confidence in animal health practice. Participants consistently reported that their undergraduate and postgraduate training provided minimal exposure to veterinary medicine. Regulatory challenges further constrained participation, as respondents highlighted the lack of clear policies or professional guidelines governing pharmacists' roles in the dispensing and management of veterinary medicines. In addition, logistical and systemic barriers were identified, including inadequate infrastructure, limited collaboration between pharmacists and veterinary professionals, and restricted access to veterinary medicines within pharmaceutical supply chains.

Conclusion: The study demonstrates that, despite pharmacists' recognition of their potential contributions to animal healthcare, they remain underutilised in veterinary pharmacotherapy in Ghana. Addressing this gap requires coordinated regulatory reform, clearer policy direction, and targeted curriculum enhancement to incorporate veterinary pharmacology into pharmacy education. Strengthening interdisciplinary collaboration between pharmacists and veterinary professionals may further optimise medicine use in animal health. Future research should examine the impact of integrating veterinary pharmacology into pharmacy training on pharmacists' knowledge, confidence, and practice, as well as its implications for antimicrobial stewardship and veterinary healthcare outcomes.

Impact of pharmacist-led telecare services on medication management outcomes for elderly patients in Ghana

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Background: The research aimed to investigate the role of pharmacist-led telecare in medication management among older adults in Ghana.

Method: The study used a qualitative approach with an exploratory design. The 25 pharmacists and 15 elderly patients were recruited using purposive and snowball sampling, and saturation was achieved after these target respondents. Thematic analysis was done with six steps by Braun and Clarke in 2019.

Results: The results reveal that pharmacists have increased their clinical activities through remote monitoring of medication, therapeutic assessment, and continuous follow-up. Elderly patients benefit from the ease of access to timely guidance, the reduction of travel burdens, and the increase in compliance with medications, wherein regular reminders and clarification are made on complex regimens. Telecare also helps in cutting unnecessary costs through reduced unnecessary clinic visits and medication-related complications. However, infrastructural gaps, unstable connectivity, and a lack of clear regulatory frameworks limit full-scale adoption despite digital readiness, mobile phone accessibility, and a strong patient demand, playing the role of enabling factors.

Conclusion: The study suggests increasing the digital infrastructure, developing clear tele-pharmacy policies, increasing pharmacist training, and increasing caregiver-supported digital access for older adults. Overall, findings of this study conclude that pharmacist-led telecare is a feasible, beneficial and cost-efficient model that can improve elderly healthcare in Ghana with sustained policy and system-level investment.

AI-driven virtual patient simulation for medication counseling training in community pharmacies to improve the delivery of healthcare services

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Background: Effective medication counselling is a cornerstone of pharmaceutical care in community pharmacies, particularly as medication regimens become increasingly complex and patient expectations for personalised care grow. Pharmacists are expected to identify drug-related problems, address adherence issues, and provide clear, patient-centred communication. However, traditional training methods often lack opportunities for realistic practice in a safe environment. Artificial Intelligence (AI)-driven virtual patient simulations offer an innovative solution by enabling pharmacy staff to engage in interactive, scenario-based training that mirrors real-life challenges.

Objective: This project aimed to develop, evaluate and implement an AI-powered virtual patient tool to enhance pharmacists' communication skills and clinical decision-making in medication counselling within the community pharmacies.

Method: A prototype AI-driven simulation agent was developed to replicate patient interactions in community pharmacy settings. The system generates patient profiles including demographic characteristics, medical histories, and current medication lists, as well as predefined challenges such as non-adherence, misconceptions, and concerns about adverse effects. Pharmacy staff engage in simulated counselling sessions in which the agent responds dynamically using natural language processing. Human factors were incorporated through the inclusion of emotional and behavioural patient characteristics. Each simulated patient was assigned an affective state (e.g., worried, sceptical, or frustrated), which influenced their responses throughout the interaction. The agent provides both implicit conversational cues and explicit annotations regarding the patient's emotional state, supporting the user's ability to interpret and respond to patient perspectives. Performance evaluation will be conducted through integrated feedback mechanisms. Following each session, the agent provides immediate automated feedback based on Danish legal requirements and professional standards for medication counselling. User performance is assessed in relation to key competencies, including needs assessment, risk communication, and shared decision-making. Furthermore, the agent is connected to the Danish medication database (pro.medicin.dk), enabling evaluation of the clinical and pharmacological accuracy. All simulation sessions are logged to enable retrospective analysis. A qualitative evaluation design is planned, consisting of one-on-one interviews with participants in which selected session logs are reviewed. These interviews aim to explore

user experiences, perceived learning outcomes, and self-reported confidence in conducting patient counselling. Furthermore, the number of real-life medication counselling sessions conducted by participants in the three months before and three months after completing the training will be compared to assess potential changes in counselling activity.

Results: A pilot study has been established involving approximately 10 pharmacy professionals, each completing around 10 simulated cases (≈ 100 sessions in total). Data collection will include system-generated performance metrics and qualitative interview data. The AI-driven feedback is designed to identify missed counselling opportunities, such as insufficient exploration of adherence or lack of verification of patient understanding. Data collection is ongoing, and no final results are available at this stage.

Conclusion: This study presents the development and planned pilot evaluation of an AI-driven virtual patient simulation for community pharmacy training. While effectiveness has not yet been established, the tool demonstrates a structured approach to simulation-based learning with integrated, competency-based feedback. The study will provide initial insights into the feasibility and potential of AI-supported training in medication counselling.

Assessment of Yemeni community pharmacists' knowledge of alendronate dosing and drug–food interactions

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Background: Alendronate is a widely used oral bisphosphonate for the treatment and prevention of osteoporosis and other conditions involving increased bone resorption. Its effectiveness depends on strict adherence to dosing instructions, including taking the medication on an empty stomach, avoiding food and certain medications around the time of administration, and remaining upright after ingestion. Failure to follow these instructions may reduce drug absorption, increase gastrointestinal adverse effects, and compromise treatment outcomes. Community pharmacists play a key role in providing medication counseling, and their knowledge of proper administration, drug–food interactions, drug interactions, and adverse effects is essential to improve patient adherence and optimize therapeutic outcomes.

Objective: This study aimed to assess Yemeni community pharmacists' knowledge of alendronate administration,

drug–food and drug–drug interactions, and adverse effects, and to explore its association with key socio-demographic characteristics.

Method: A cross-sectional study was conducted between February and July 2021 among community pharmacists in Sana'a, Yemen using a self-administered questionnaire. From a population of 400 pharmacists, a simple random sampling technique was applied, and the required sample size ($n = 377$) was calculated using the Raosoft Sample Size Calculator with a 95% confidence level. A total of 330 completed questionnaires were returned, giving a response rate of 87.5%. The validated questionnaire assessed pharmacists' knowledge across three domains: proper use of alendronate, interactions with food/beverages and medications, and adverse effects, along with demographic variables. Knowledge scores were calculated by assigning one point for each correct answer, and descriptive statistics were used for analysis, with statistical significance set at $p < 0.05$.

Results: A total of 330 pharmacists participated in the study, with the majority being male (96.1%) and aged 25–36 years (64.8%). Nearly half held a BPharm degree (49.4%), while 47.0% had a pharmacy diploma and 3.6% possessed other qualifications. Regarding professional experience, most participants reported 3 to <6 years of practice (29.7%), followed by 1 to <3 years (26.9%), and the majority were pharmacy employees (61.3%), with 86.1% graduating from private colleges. Assessment of knowledge revealed a median score of 10 (range: 2–14) for proper alendronate use, suggesting a moderate level of understanding of correct administration. However, knowledge was lower in other domains, with median scores of 2 (range: 0–8) for food and beverage interactions, 3 (range: 0–9) for drug–drug interactions, and 3 (range: 0–7) for adverse effects, indicating gaps in awareness that could affect safe and effective patient counseling and treatment outcomes.

Conclusion: Yemeni community pharmacists demonstrated an intermediate level of knowledge of alendronate, with stronger understanding of proper administration but notable gaps in food and drug interactions and adverse effects. These results highlight the need for targeted education and professional development to improve clinical knowledge, patient counseling, and osteoporosis treatment outcomes.

Minor ailments, major impact: Using small group learning to build practitioner confidence in Ontario, Canada community pharmacy practice

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Background: Pharmacists in the province of Ontario, Canada received prescriptive authority for 13 minor ailments (MA) in January 2023. The University of Waterloo School of Pharmacy and the Ontario Pharmacists Association initially supported this scope expansion for pharmacists through co-developed self-directed, online educational modules. While the first stage of implementation of MA services has occurred, considerable variation in adoption and delivery patterns across the province persists. With provincial regulatory approval now authorizing pharmacists' authority to assess and prescribe for 19 conditions, and 14 additional conditions awaiting final approval, evaluating whether existing educational models adequately support pharmacy team members' confidence in providing MA services has become crucial for developing appropriate training methodologies and support tools.

Method: Ontario pharmacists and registered pharmacy technicians actively involved in MA service delivery were invited to participate in a small-group, in-person workshop series. A pilot workshop was delivered in October 2024, followed by four additional workshops between April and October 2025, totaling five workshops and approximately 60 participants. Each five-hour workshop incorporated synchronous and asynchronous components, combining interactive peer discussion with didactic instruction on service implementation, audit preparation, and workflow optimization. Participants also engaged in a live, hands-on demonstration of a specialized digital MA practice support tool. Anonymous pre- and post-workshop surveys assessed participant confidence in MA service delivery and evaluated the workshop's impact on professional practice. Participants were offered a virtual follow-up session six weeks after each workshop.

Results: Pre-workshop survey responses indicated that self-reported confidence in providing MA services was suboptimal at baseline. Following the pilot workshop, a statistically significant increase in participant confidence was observed, with mean scores rising from 3.9 to 4.5 on a 5-point scale ($p < 0.05$), and 100% of pilot participants indicating they would recommend the workshop to colleagues. Across all five workshops, post-workshop satisfaction ratings were

consistently strong. Mean scores for overall workshop satisfaction, instructor quality, content relevance, and intent to increase MA service delivery exceeded 4.5 out of 5.0 across the sessions. Recommendation intent remained near-universal throughout the workshop series. Recurrent qualitative themes highlighted the value of peer-led discussion in a safe, small-group environment, practical audit preparation guidance, live demonstration of a digital practice support tool, and strategies for engaging the broader pharmacy team in MA delivery. Participants consistently identified time constraints and workflow integration as primary barriers, underscoring the ongoing support needs of pharmacy teams as professional scope continues to evolve.

Conclusion: A facilitated small group learning model combining peer interaction, practical implementation guidance, and live demonstration of purpose-built digital tools consistently and effectively enhanced pharmacist and pharmacy technician confidence in minor ailment service delivery across five workshop iterations. Sustained positive feedback and near-universal recommendation intent support the scalability and reproducibility of this approach. As Ontario's MA formulary continues to expand and other Canadian provinces develop comparable scope-of-practice frameworks, this model offers a replicable structure for supporting pharmacy teams in transitioning from early adoption to optimized, sustainable clinical service delivery.

Assessing community pharmacists perceived barriers and drivers toward vaccination service in Saudi Arabia

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Background: Vaccination is one of the most effective public health interventions for preventing infectious diseases, yet uptake of several adult vaccines in Saudi Arabia remains suboptimal. Community pharmacists (CPs) are highly accessible healthcare professionals and, since 2019, have been authorised to administer a range of vaccines to adults in Saudi Arabia. However, the implementation of vaccination services in community pharmacies appears limited. Understanding CPs' vaccine-related knowledge, attitudes, readiness, and perceived barriers and drivers is essential to inform strategies that expand their role in immunisation. This study aimed to assess these factors among community pharmacists in Riyadh, Saudi Arabia.

Method: A cross-sectional survey was conducted among licensed community pharmacists practising in Riyadh. A stratified sample of independent and chain pharmacies was selected, and pharmacists were invited to complete an anonymous self-administered questionnaire. The instrument

was comprised of five sections: demographic and practice characteristics; attitude towards immunisation; attitude toward being an immunisation provider; readiness to provide immunisation services; and knowledge about vaccines. Knowledge was assessed using 16 true/false items (score range 0–16) and categorised as low, moderate, or high. Attitude and readiness scales used five-point Likert items. Internal consistency was examined using Cronbach's alpha. Descriptive statistics were calculated. Group comparisons used non-parametric tests, while Spearman's rank correlations and multivariable linear regression were used to explore associations. A p value <0.05 was considered statistically significant.

Results: A total of 258 community pharmacists participated. Most were male (94.6%), non-Saudi (78.3%), and working in urban areas (91.9%). The majority (80.2%) reported working more than 40 hours per week and over one third had more than ten years of community pharmacy experience. Knowledge scores ranged from 0 to 16 (mean 9.84, SD 3.87; median 11), with 34.9% classified as having low knowledge, 42.6% moderate knowledge, and 22.5% high knowledge. Several items related to vaccination during pregnancy, mild illness, breastfeeding, and immunosuppression showed low correct response rates, indicating important gaps. The attitude and readiness scales demonstrated acceptable to good reliability, and mean scores indicated generally favourable attitudes towards vaccines and towards assuming the immunisation provider role, as well as good readiness to offer vaccination services. Knowledge score was positively correlated with attitude towards immunisation, attitude to being an immunisation provider, and readiness (Spearman's $\rho \approx 0.29$ – 0.30 , $p < 0.001$). The three psychosocial scales were moderately to strongly intercorrelated. Pharmacy location (urban versus rural) and other demographic or practice characteristics were not clearly associated with knowledge level or high-knowledge status.

Conclusion: Community pharmacists in Riyadh showed generally positive attitudes and readiness to provide vaccination services but only moderate vaccine-related knowledge, with notable gaps in key clinical areas. Higher knowledge was associated with more favourable attitudes and greater readiness, suggesting that knowledge is an important driver of pharmacists' engagement in immunisation. Targeted education and continuing professional development, alongside supportive policies and practice environments, are needed to strengthen CPs' contribution to vaccination services and to advance preventive healthcare within Saudi Arabia.

Development and implementation of a national quality system (apo-Q) in danish community pharmacies

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Background: The national healthcare quality and accreditation programme ended in 2021, leaving community pharmacies without a formal national quality system. For the next three years, there was no shared framework to support quality and patient safety in community pharmacies. This highlighted the need for national tools to support consistent quality across pharmacies. In 2025, a national agreement with the Danish government funded a new central quality unit within the Association of Danish Pharmacies to develop and maintain quality materials, digital tools, and quality development. The Quality Unit has been fully operational since August 2025. The purpose was to develop a functional and unified quality system and management framework designed to enable quality assurance, control, and improvement. The system was designed to function across pharmacy units of all sizes and reflect everyday practice.

Method: Input for the quality system was gathered from the Quality Committee (pharmacy owners). The quality system was developed by the quality unit, drawing on both internal expertise and practical experience. Early versions were tested by the Quality Corps (pharmacy employees). Feedback guided improvements. Implementation was supported through a structured communication plan with information on quality conferences, an introductory film explaining the quality system and guidance on how to implement. Furthermore, news and updates were shared through the Association's communication channels.

Results: The developed quality system consists of six modules structured around everyday pharmacy practice. Each module includes clear descriptions of required quality actions, legal references, access to relevant information, and supporting materials such as templates and check lists. Legal requirements are highlighted in red, while elements representing good practice are marked with black text. Updates are clearly marked. Every module ends with a check list of mandatory actions to support pharmacies in meeting regulatory requirements. In addition, a collection of quality documents and templates was created to promote consistent and high-quality work. Implementation data show that 78% of responding pharmacies report using the quality system, while the remaining 22% plan implementation during 2026. The survey response rate was 43.9%. A support function was established, offering assistance by phone, email, and

scheduled online calls. Data show that 20% of all pharmacies have contacted the support function. Among those who completed the evaluation survey, the average satisfaction score was 4.95 out of 5. Furthermore, the development of the system has initiated new collaboration between the Association of Danish Pharmacies and the Danish Medicines Agency on enhancing quality work in community pharmacies.

Conclusion: The results show that the system's structured modular design, clear quality actions, legal references, and mandatory check lists have created a coherent and practical tool that supports consistent quality work across pharmacies. The adoption rate and user satisfaction indicate that the system functions effectively in everyday practice. The development process could have been strengthened through a longer testing period and broader pilots. Future work should include on-demand online quality training and guidance materials to help pharmacies prepare for inspections from the Danish Medicines Agency.

Implementation of a pharmacist-led therapeutic assessment framework to identify and resolve drug therapy problems in community practice

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Background: Medication nonadherence is a significant and growing burden on the Canadian healthcare system, contributing to increased morbidity, hospitalizations, and avoidable healthcare costs. Cost-related nonadherence affects between 4% and 36% of Canadians depending on population characteristics and access to drug coverage and is associated with increased healthcare utilization, including emergency department visits and hospital admissions. Broader estimates suggest medication nonadherence contributes to up to 5.4% of hospitalizations and approximately \$1.6 billion annually in avoidable healthcare costs in Canada). Concurrently, pharmacists globally are advocating for expanded scope of practice, necessitating measurable demonstrations of clinical impact. Structured assessment frameworks offer an opportunity to systematically quantify pharmacist contributions to medication optimization and patient outcomes. This study evaluated the implementation of a standardized pharmacist-led framework to identify and resolve drug therapy problems (DTPs) in a community pharmacy setting.

Method: Beginning in April 2025, a structured assessment framework was implemented across a community pharmacy team. The framework evaluated medication therapy across four domains: indication (appropriateness of therapy), efficacy (dose optimization and guideline alignment), safety (drug interactions and toxicity), and adherence (barriers to access and patient understanding). Pharmacists conducted

patient assessments and follow-ups as part of routine care, documenting identified DTPs and interventions.

Results: Over the study period, 150 drug therapy problems were identified and addressed through pharmacist led interventions. Common issues included missing or inappropriate indications, suboptimal dosing, safety concerns, and medication nonadherence. Nonadherence accounted for 42 of the 150 DTPs, but only 15 of these were related to financial barriers. Other contributing factors included misunderstanding of medication indication, confusion over dosing schedules, and other patient education gaps. Follow up assessments supported ongoing therapy optimization and improved patient engagement. Assuming even a modest proportion of identified DTPs prevent downstream healthcare utilization, these interventions may translate into meaningful reductions in avoidable system burden

Conclusion: Implementation of a structured pharmacist led therapeutic assessment framework enabled systematic identification and resolution of drug therapy problems in a community setting. Importantly, findings demonstrate that not all nonadherence is financial in nature, highlighting the value of pharmacist led education and counseling in addition to cost related interventions. Beyond improving individual patient care, this approach provides a scalable method to quantify the clinical impact of pharmacists and supports advocacy for expanded scope of practice while reducing medication related harm and healthcare system burden.

Evaluation of the influence of media on self-medication among users attending a community pharmacy

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Background: Self-medication, defined as the use of medicines without the prescription or supervision of a healthcare professional, represents a growing public health concern worldwide. This practice is associated with significant risks, including adverse drug reactions, drug intoxication, antimicrobial resistance and delays in the diagnosis and treatment of diseases. In Chile, medicine advertising is legally restricted to over-the-counter products; however, the widespread availability of digital media, internet search engines and social media platforms has increased public exposure to health-related information of variable quality. This phenomenon may encourage inappropriate medicine use and reinforce self-medication behaviours. Despite the relevance of this issue, limited evidence is available regarding the influence of media on self-medication practices in community pharmacy users. The aim of this study was to evaluate the influence of mass media and digital platforms on

self-medication among users attending a community pharmacy in Temuco, Chile.

Method: A cross-sectional study was conducted between April and May 2024 in a private community pharmacy located in Temuco, southern Chile. A validated questionnaire consisting of 16 items was administered to pharmacy users aged 15 years or older who reported regular access to mass media, including television, internet search engines and social media. The minimum required sample size was calculated as 371 participants, assuming a 95% confidence level and a 5% margin of error. A total of 450 valid questionnaires were collected and included in the analysis. Data were analysed using descriptive statistics to characterise self-medication practices and media exposure. The chi-square test was applied to assess the association between exposure to media sources and self-medication behaviour, considering a p-value < 0.05 as statistically significant.

Results: Self-medication was reported by 92% of participants, a prevalence substantially higher than that reported by the Chilean National Health Survey 2016–2017 (26%). Internet-based sources were identified as the main contributors to self-medication practices. Internet search engines accounted for 34.1% of reported influence, followed by social media platforms at 30.4%. The most frequently used therapeutic groups were analgesics (60.4%), antihistamines (7.4%) and antibiotics (7.1%). Notably, the use of amoxicillin for non-indicated respiratory symptoms was reported, highlighting inappropriate antibiotic consumption. Statistical analysis demonstrated a significant association between exposure to media sources and self-medication behaviour ($\chi^2 = 81.70$; $p < 0.001$), indicating that increased media exposure was linked to a higher likelihood of self-medication.

Conclusion: Self-medication among community pharmacy users in Temuco shows a high prevalence and is strongly influenced by digital media and social networks. The findings suggest that easy access to online health information contributes to inappropriate medicine use, including the misuse of antibiotics. These results emphasise the need to strengthen health education strategies, promote rational medicine use and reinforce the role of pharmacists in patient counselling within community pharmacy settings. Furthermore, the study highlights the importance of developing stricter regulatory frameworks and public health interventions to improve the quality of medicine-related information disseminated through media channels, thereby reducing the risks associated with self-medication.

The importance of pharmacists and pharmaceutical technicians in the counselling of patients with sarcopenia

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Background: Sarcopenia is a progressive and generalized syndrome characterized by the loss of skeletal muscle mass, strength, and function, most often associated with the aging process. Early recognition and appropriate management, including nutritional support, physical activity, and pharmacotherapy where applicable, are essential. Pharmacists and pharmaceutical technicians are among the most accessible healthcare professionals; their specific role and clinical contribution to sarcopenia management remain insufficiently explored.

Objective: This study aimed to evaluate the knowledge, attitudes, and current practices of pharmacists and pharmaceutical technicians regarding the counselling and management of patients with sarcopenia. **Materials and Methods:** A cross-sectional observational study was conducted using a structured, purpose-designed anonymous questionnaire distributed via Google Forms. The survey assessed the knowledge and professional attitudes of 130 respondents, consisting of pharmacists (69.2%) and pharmaceutical technicians (30.8%). Data were analysed using descriptive statistics to evaluate responses on Likert-type scales and closed-ended questions.

Method:

Results: The majority of respondents were aged between 29 and 50 years old (67.7%), with 63.8% possessing 6 to 26 years of professional experience. While a vast majority (93.1%) correctly identified sarcopenia as a loss of muscle mass and strength associated with ageing, and all respondents (100%) recognised its impact on mortality and quality of life, a significant gap in professional confidence was observed. Specifically, 50% of respondents maintained a neutral stance regarding the adequacy of their own knowledge. Although 60% acknowledged their pivotal role in patient recognition and counselling, 60% emphasised the need for more frequent specialised education. Regarding clinical practice, 62% recommend dietary supplements for muscle preservation, and 50% provide advice on protein intake and physical activity. However, 51% reported poor patient adherence, and 50% felt they lacked sufficient time for comprehensive counselling.

Conclusion: Pharmacists and pharmaceutical technicians possess significant potential to improve outcomes for patients with sarcopenia through early screening and nutritional counselling. However, these findings underscore a critical need for targeted educational programmes and the development of clinical guidelines to strengthen their competencies and address the current neutrality in professional confidence. Enhancing the role of the pharmacy team is vital for addressing the challenges of an ageing population and improving patient adherence to sarcopenia protocols.

The evolution of community pharmacy in Italy: Legislative reforms expanding pharmaceutical services within the national health system

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Background: Italy has recently enacted two landmark legislative measures that fundamentally transform the role of community pharmacies within its national healthcare framework. Law 182/2025, the Simplification Law (SL), entered into force on 18 December 2025, whilst the Budget Law 2026 (BL2026), approved on 30 December 2025, collectively represent a paradigm shift in Italian pharmaceutical policy. These reforms reposition community pharmacies from traditional medicine dispensing outlets towards fully recognised healthcare facilities, formally integrating them into the National Health Service (NHS), known in Italy as the Servizio Sanitario Nazionale (SSN), under the Essential Levels of Assistance (LEA).

Method: This presentation analyses the key legislative provisions of the SL and BL2026, examining their impact on the scope of professional practice, organisational frameworks, and NHS funding mechanisms for Italian community pharmacies. Specific focus is placed on Articles 60, 61, and 62 of the SL and Articles 351–356 of BL2026. National service delivery data, collected up to October 2025, are presented to contextualise the reforms within current practice across Italy's approximately 19,000 community pharmacies.

Results: The SL introduces significant expansions to pharmacy practice. Article 60 broadens diagnostic services, removing prior restrictions limiting tests to self-monitoring use only. Vaccination services are substantially extended to encompass all vaccines included in the National Vaccination Prevention Plan (NVPP), with the minimum eligible patient age reduced from 18 to 12 years. Telemedicine services are formally authorised beyond the previous limited set of instrumental measurements, now encompassing teleconsults, telemonitoring, medication reviews, and post-discharge follow-up. Additional new services include decentralised diagnostic testing to

combat antimicrobial resistance (AMR), hepatitis C virus (HCV) screening, and administrative services such as general practitioner (GP) registration at the pharmacy. Article 62 introduces annual repeatable electronic prescriptions for patients with chronic conditions, alongside a provision enabling medication dispensing upon presentation of hospital discharge documentation, thereby improving continuity of care. Article 61 reduces the mandatory advance notification period for medicine shortages from four to two months and significantly increases financial penalties for non-compliant Marketing Authorisation Holders. BL2026 provides permanent structural integration of pharmacy services into the NHS and doubles annual dedicated funding from approximately €25 million — previously fragmented across pilot programmes — to a consolidated earmarked allocation of €50 million. As of October 2025, 11,395 pharmacies were actively delivering services, recording over 6.5 million colorectal cancer screening procedures, 1.36 million COVID-19 vaccinations, and more than 2.1 million Electronic Health File activations.

Conclusion: The combined framework of Law 182/2025 and BL2026 represents a historic structural transformation of Italian community pharmacy. Permanent NHS recognition, sustained dedicated funding, and an expanded clinical service portfolio collectively establish community pharmacists as essential professionals within Italy's territorial healthcare system. The model offers valuable insights for international healthcare systems seeking to leverage community pharmacy networks to improve access, address chronic disease management, and strengthen public health resilience.

Education on the appropriate use of medicines through game-based learning grounded in sporting values: Learning outcomes in elementary schools in Indonesia

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Background: Children increasingly face situations that require decisions about medicines, supplements, and beverages. Decisions based on incorrect information can lead to misunderstandings about altering doses, using another person's medicine, and combining medicines, potentially resulting in unintentional misuse and health harm. This study examined the educational effects and feasibility of an experiential medicine education programme grounded in sporting values, practised in Japan, when implemented in two elementary schools in Indonesia through the international cooperation framework of the Sport for Tomorrow

Consortium (SFTC). The learning design was based on the anti-doping perspective that even unintentional misuse can cause problems. Using Doping Guardian, a card-game educational tool originally developed for professional athletes, the programme was designed to help children learn through sport about inadvertent doping risks related to medicines and supplements, as well as medicine misuse and abuse among children.

Method: The programme was conducted on 19 and 22 January 2026 at two elementary schools in Bali, Indonesia: the private school High Scope Bali and the public school SDN 22 Dauh Puri. Participants were 151 children and 25 teachers. Programme design and outcome evaluation were carried out with the cooperation of the Department of Clinical Pharmaceutics, School of Pharmaceutical Sciences, University of Shizuoka. The programme consisted of a lecture, experiments, and experiential learning. In the lecture component, Doping Yokai, a character-based educational tool developed based on the Prohibited List, was used as introductory material. In the experiential learning component, Doping Guardian was used to simulate decision-making about medicines and supplements from an athlete's perspective. To address language and comprehension barriers, an Indonesian-language animated video on overdose prevention was also used. Educational effects were assessed using pre- and post-session true/false tests with eight items each. Although the pre- and post-tests did not use identical questions, experts developed corresponding items with similar difficulty based on eight major concepts.

Results: The 90-minute programme was completed at both schools, and pre- and post-session tests were collected from all 151 children. The overall correct answer rate improved from 57.5% (695/1208; 95% CI, 54.7-60.3) to 70.4% (850/1208; 95% CI, 67.7-72.9), an increase of 12.8 percentage points. The mean number of correct answers increased from 4.60 to 5.63. By school, the correct answer rate improved from 59.9% to 78.1% in SDN 22 Dauh Puri and from 55.3% to 63.1% in High Scope Bali. Marked improvements were observed in items related to energy drinks, misconceptions about sharing medicines with family members, and understanding of appropriate medicine use. Children also explained their judgements and remained actively engaged throughout the sessions.

Conclusion: An experiential medicine education programme grounded in sporting values was implemented in schools in Indonesia, and pre-post evaluation confirmed improvement in knowledge indicators. These findings suggest that this approach could function as a practical implementation model enabling collaborative delivery with local educators and simultaneous data collection. Further refinement of evaluation measures and programme design will be needed to support sustained implementation and future expansion in domestic and international settings.

Immediate-use compounding: Aseptic technique training and competency for preparing sterile preparations outside of the cleanroom environment or segregated compounding area (SCA)

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Background: Healthcare organizations around the world desire and promote aseptic technique to be used when compounding or preparing sterile medications to minimize contamination and subsequent potential infections in patients. Revisions to USP <797>, which became official November 1, 2023, require training for anyone preparing compounded sterile preparations (CSPs) for immediate-use, including healthcare professionals such as pharmacists, nurses, veterinarians, human doctors, respiratory therapists, anesthesiologists, certified registered nurse anesthetists (CRNAs), and anesthesia technicians. It is especially important to ensure aseptic technique is followed outside the cleanroom environment such as in emergency rooms, ambulances, surgical suites, nursing units, interventional radiology, and cardiac catheterization labs.

Method: Writing and developing your standard operating procedure (SOP) for formal education, training and competency demonstration that includes didactic and hands-on return demonstration on the necessary components is paramount to achieving success and maintaining compliance with USP <797>. These components include proper hand hygiene (washing hands with soap and water or using isopropyl alcohol [IPA] based hand sanitizer when no soap and water are available), disinfecting vial stoppers with IPA prior to puncture, maintaining no-touch technique of critical sites (needles, syringe hubs, or plunger tips), controlling the compounding space and/or air quality when possible to reduce contamination risks by creating a clean field for work and minimized traffic, conducting visual inspection of final preparation, and ensuring the administration of an immediate-use CSP begins within 4 hours. Utilizing the concept of "Teach One, See One, Do One" is also an important concept for maintaining asepsis during the compounding process. In addition to educational content, it is also paramount that the SOP define who is responsible for the education, training and competency program.

Results: Even under optimal conditions with items prepared aseptically, the probability of producing a contaminated CSP is approximately 0.1% (1 in 1,000). However, studies conducted demonstrate real-world contamination rates range from 0.3% to 16%. Education, training and competency of aseptic technique decreases the chance of producing a contaminated CSP and a patient getting an unnecessary infection while receiving medical care.

Conclusion: Immediate-use sterile compounding requires strict adherence to aseptic techniques to minimize contamination when preparing CSPs outside an ISO-certified environment. Education, training and competency demonstration meets the standards required for sterile compounding outside a cleanroom environment or SCA. Having a solid education, training and competency program with designated leader(s) results in competent employees who prepare immediate-use CSPs. This reduces the risk of producing contaminated CSPs and emphasizes patient safety and quality of care.

Knowledge and adoption of a new service at the community pharmacies in Denmark

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Background: When a new healthcare service is to be delivered at community pharmacies across the country, the Association of Danish Pharmacies develops materials to support and standardize the implementation. The benchmark published by the Association of Danish Pharmacies clearly shows that there are substantial differences in how individual pharmacists succeed in implementing healthcare services. Danish community pharmacies had been introduced to PEP-flute instruction as a new service supported by implementation materials consisting of a manual, protocols, and a form. These materials were published on the members' Sharepoint in September 2025. The aim was to explore the knowledge, use and perceived barriers/facilitators related to the implementation materials developed to support PEP-flute instruction in Danish community pharmacies. The following questions were to be answered: -Through which communication channels had pharmacists and technicians received information regarding the instruction and the associated materials? -Which factors or barriers had impeded the utilization of the material? -Among participants who made use of the material, we examined which factors influenced both the implementation process and the level of knowledge of the material -In what ways was the material being utilized?

Method: Data were collected both quantitatively via a questionnaire distributed to all community pharmacies and qualitatively through interviews with pharmacists and technicians. The questionnaire was distributed using Microsoft Forms, and the interviews were conducted via Microsoft Teams.

Results: Out of 56 respondents, 37 (66%) had heard about the completed material regarding PEP-flute instruction. In the following responses, only data from respondents who are familiar with the material are used. Most respondents

became aware of the material through the members' Sharepoint and through colleagues/ pharmacy owners. Only a few had heard about the material through Facebook or LinkedIn. 32% had experienced barriers that have limited the use of the material. The barriers most respondents experienced were a lack of knowledge about the material, lack of time, and the absence of fee for providing the service. Three factors had a positive impact on the implementation of the material: -recognizability in relation to previous similar services -clarity and ease of use -the fact that pharmacists and technicians had received education on the material 75% of the respondents used the material as described in the manual. The results above are the outcome of the questionnaire survey. The results from the interviews will be ready for the poster presentation.

Conclusion: Knowledge about new services is most effectively communicated through the members' network and colleagues/pharmacy owners, and to a lesser extent through social media. When implementing a new service, it is essential to focus on training related to both the material and the service itself. In this context, it is advantageous that the material is recognizable and easy to understand. Conversely, lack of time and the absence of remuneration are factors that may hinder the adoption of this service.

National analysis of oral antibiotic prescribing and associated diarrhea risk

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Background: Antibiotic consumption remains high worldwide and is frequently associated with gastrointestinal adverse drug reactions, particularly antibiotic-associated diarrhea (AAD), which may affect treatment adherence and increase healthcare burden. The risk of AAD varies between antibiotics and depends not only on pharmacological properties but also on real-world utilization patterns. Integrating consumption data with pharmacovigilance signals allows better estimation of the overall public health impact of specific agents. In parallel, growing evidence supports the role of strain-specific probiotics in preventing AAD. However, rational implementation of such preventive strategies requires data-driven prioritization of high-risk antibiotics and structured pharmaceutical care approaches at the community level.

Method: Antibiotic consumption data (ATC J01) for 2020–2024 were obtained from the National Health Insurance Fund, including total prescriptions for oral antibiotics by INN. Consumption trends were correlated with adverse drug reactions (ADRs) retrieved from EudraVigilance. For each antibiotic, total ADRs, gastrointestinal (GI) ADRs, diarrhea reports, and non-GI ADRs were extracted. Disproportionality was assessed using the Reporting Odds Ratio (ROR) derived from 2x2 contingency tables, calculating separate RORs for GI ADRs and diarrhea. Diarrhea risk was estimated using SmPC frequency data from the national drug register. For antibiotics with >150,000 prescriptions (2020–2024), estimated mean diarrhea cases and diarrhea RORs were normalized (min–max, 0–1), combined into a composite score, and ranked. A PubMed search (2015–2025) using “probiotic” AND “antibiotic-associated diarrhea,” and review of ESPGHAN and WGO guidelines, were used to evaluate probiotic efficacy.

Results: A total of 8,343,617 prescriptions were reimbursed (mean 1,668,723/year). Amoxicillin/clavulanic acid accounted for 2,763,438 (33.1%), followed by azithromycin 1,015,581 (12.2%). Penicillins (J01C) predominated (3.58 million), followed by cephalosporins (J01D) (1.87 million). EudraVigilance recorded 279,301 ADRs (August 2025), mainly for amoxicillin/clavulanic acid (25.8%), amoxicillin (18.3%), and ciprofloxacin (14.8%). GI ADRs totaled 65,918. Diarrhea reports were highest for amoxicillin/clavulanic acid (5,595), amoxicillin (2,745), and azithromycin (2,282), and lowest for lincomycin (15), midocamycin (5), and sulfamethrole+trimethoprim (2). The highest diarrhea proportions among GI ADRs were for pefloxacin (43.1%), cefixime (39.3%), amoxicillin/clavulanic acid (38.2%), and azithromycin (37%), and lowest for doxycycline (15.0%) and sulfamethrole+trimethoprim (14.3%). The integrated ranking identified amoxicillin/clavulanic acid as having the highest public health impact, followed by azithromycin, clindamycin, cefixime, and cefalexin. Given this burden, evidence supports targeted probiotic co-administration. *Saccharomyces boulardii* CNCM I-745 and *Lactobacillus rhamnosus* GG, as well as selected multi-strain *Lactobacillus*–*Bifidobacterium* formulations, have demonstrated significant reductions in antibiotic-associated diarrhea, with strain- and dose-dependent efficacy.

Conclusion: In this context, strengthening pharmaceutical care in community pharmacies in North Macedonia is essential. Pharmacists should move beyond general advice to “use a probiotic” and provide structured, evidence-based recommendations, selecting products with clinically validated strains and appropriate doses. Establishing a national probiotic registry specifying composition and recommended dosing would further support rational, standardized recommendations. Integrating such strain-specific counseling at the point of antibiotic dispensing could reduce AAD incidence and strengthen antimicrobial stewardship at the primary healthcare level.

Exploring community pharmacists' perspectives on pharmacist-led prediabetes management in Malaysia: A qualitative study

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Background: Diabetes mellitus represents a major public health challenge in Malaysia. National Health and Morbidity Survey indicate that approximately one in five Malaysian adults is living with diabetes, with prevalence continuing to rise. Prediabetes is even more widespread, affecting an estimated one-third of the adult population, placing a substantial proportion of individuals at high risk of progression to type 2 diabetes mellitus. Alarming, a significant proportion of these cases remain undiagnosed, limiting opportunities for early intervention and prevention. Despite strong evidence that timely lifestyle modification and pharmacological intervention can delay or prevent disease progression, access to preventive services remains constrained within conventional healthcare settings. Community pharmacists, as highly accessible healthcare professionals, are well positioned to support early detection and patient-centred prediabetes management; however, their role in this area remains underutilised and underexplored in the Malaysian context.

Method: A qualitative study was conducted using semi-structured interviews with community pharmacists practising in Malaysia. Participants were purposively sampled from a local chained community pharmacy outlets that had implemented pharmacist-led prediabetes services following structured training. Interviews were conducted virtually, audio-recorded with consent, and transcribed verbatim. Data were analysed using the Framework Method, allowing systematic comparison across participants. Thematic analysis was undertaken to identify key facilitators, barriers, and foundational requirements for pharmacist-led prediabetes management. Data collection continued until thematic saturation was achieved.

Results: Six community pharmacists participated, with practice experience ranging from one to over twenty-six years. Three overarching themes emerged. First, facilitators included pharmacists' strategic accessibility, routine patient contact, and trust from patients, alongside the practical value of point-of-care glycated haemoglobin testing (HbA1c) for early detection. Pharmacist-initiated metformin therapy, when combined with lifestyle counselling, was perceived as clinically appropriate and effective. Interprofessional collaboration, particularly with dietitians, was viewed as essential for sustainable lifestyle modification support. Second, pharmacists identified structural and financial barriers that constrained service delivery and scalability. Limited manpower and competing workflow demands reduced the time available for extended counselling and follow-up. Pharmacists also highlighted the substantial

upfront cost of point-of-care HbA1c testing devices and cost of test strips. These operational costs were perceived to directly influence service pricing, potentially increasing out-of-pocket expenses for patients and limiting uptake of prediabetes screening. Third, pharmacists highlighted the need to better bridging science, practice, and education to support sustainable prediabetes services. Gaps in standardised guidelines and variable confidence in medication initiation were perceived as barriers to consistent care. Participants emphasised that structured education since undergraduate courses, clear clinical protocols, interprofessional collaboration, and ongoing professional development are essential to embed pharmacist-led prediabetes management within primary health care and strengthen patient-centred preventive services.

Conclusion: Community pharmacists in Malaysia perceive pharmacist-led prediabetes management as feasible, clinically valuable, and aligned with their professional role. Successful implementation depends on access to screening tools, structured training, adequate staffing, interprofessional collaboration, and clear national guidelines. These findings support the integration of community pharmacists into preventive diabetes care strategies and inform future service development, policy formulation, and research on scalable pharmacist-led chronic disease prevention models.

How pharmacist prescribing education programs work: A realist synthesis

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Background: Research on how pharmacist prescribing education programmes are working was guided by an initial programme theory (IPT) constructed from exploratory searching and literature. The IPT proposed that prescribing education programmes [interventions] aimed at pharmacy students and pharmacists [contexts] can improve confidence, knowledge and self-efficacy [outcomes] through mixed pedagogical approaches that foster experiential, reflective and social learning [mechanisms]. The research aimed to examine what works, for whom, why and in which circumstances. The objective was to test the IPT by comparing it with the Context Mechanism Outcomes Configurations (CMOCs) and to modify the theory to reflect configurations that were supported by data.

Method: A realist synthesis, applying RAMESES standards, was used to investigate how pharmacist prescribing education operates across undergraduate, postgraduate and continuing professional development (CPD) programmes and to explore the causal processes that generate learning outcomes. Databases in PubMed, Scopus, Web of Science and CINAHL were searched on July 2024 and again in November 2025. Screening of titles and abstracts was carried out by the first author, with 25% independently reviewed by a second author for quality assurance. Primary research studies in English were included. CMOCs data with a focus on mechanism and outcomes were extracted.

Results: Screening of 2,323 papers resulted in 160 for full text review and the inclusion of 23 papers representing, undergraduate (n=5), postgraduate (n=13) and CPD (n=7) programmes. In undergraduate programmes, experiential learning was reported across several studies as contributing to the learning outcomes of confidence, developing skills and self-development, with students describing how simulated or applied prescribing activities supported capability growth and the application of knowledge. In postgraduate award programmes studies, experiential learning was noted as relating to confidence and knowledge acquisition. Social learning was reported as supporting knowledge, skills and satisfaction, particularly when learners discussed prescribing decisions with peers or supervisors. Reflective practice was described as contributing to deeper knowledge when learners reviewed their practice in structured ways. In CPD programmes, experiential learning was identified across studies as relating to knowledge acquisition, particularly where learning aligned closely with day-to-day practice. Social learning was described as supporting satisfaction, with participants emphasising the value of peer interaction during case based or workplace-based activities. Negative mechanisms were observed in postgraduate programmes. Students' perceptions of the learning environment could hinder knowledge development and generate dissatisfaction. Dissatisfaction was also reported when students perceived a lack of utility. Across programme types, experiential learning was consistently associated with confidence in undergraduate and postgraduate settings. Social learning repeatedly appeared to support satisfaction in postgraduate and CPD settings. Learner perceptions of the educational environment also featured in studies as shaping knowledge and satisfaction outcomes.

Conclusion: The synthesis showed that opportunities for experiential engagement, interaction with peers and supervisors, and reflection shaped learning experience, which was associated with developments in knowledge, skills, confidence, and satisfaction. Revisions to the IPT demonstrate how mechanism-outcome (MO) patterns strengthen theoretical understanding of prescribing education. It offers educators and regulators a mechanism focused on explaining of how learning outcomes are produced in pharmacist prescribing education.

Patient awareness of vitamin B₁₂ deficiency risk during oral metformin treatment in Denmark: The role of community pharmacies

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Background: Type 2 diabetes mellitus is a major public health concern both nationally and globally. Metformin is the first-line pharmaceutical oral treatment for type 2 diabetes mellitus, but long-term use can impair the absorption of vitamin B₁₂, increasing the risk of deficiency. Vitamin B₁₂ deficiency may cause hematological and neurological complications and can be difficult to differentiate from diabetic neuropathy. Danish clinical guidelines recommend monitoring vitamin B₁₂ levels every two years in patients receiving metformin. As part of routine patient counselling, pharmacy health professionals often ask patients about vitamin B₁₂ monitoring or supplementation. However, practical experience shows that most patients respond “no”, indicating limited awareness. Community pharmacies may therefore play an important role in preventive care through patient identification and education. The purpose of this project is thereby to assess patient awareness of vitamin B₁₂ deficiency risk and monitoring recommendations during long-term metformin therapy and evaluate the need for enhanced counselling in community pharmacies.

Method: A quantitative cross-sectional study was conducted using a structured questionnaire distributed across the three community pharmacy branches to patients receiving oral metformin therapy. Data collected included demographics (age and gender), duration of metformin use, vitamin B₁₂ supplementation, monitoring practices, awareness of vitamin B₁₂ deficiency risk, and sources of information. Relevant literature was used to support interpretation of the findings.

Results: A total of 112 completed questionnaires were included in the analysis. Most respondents were over 50 years of age and had used metformin for more than two years. Awareness was low: 14.3% of respondents were aware of the importance of vitamin B₁₂ in metformin-treated patients, and only 12.5% were aware of the association between metformin use and vitamin B₁₂ deficiency. Only 26.8% participants reported using vitamin B₁₂ supplements. Monitoring practices were inconsistent, with many patients reporting no monitoring or uncertainty regarding testing. Among informed patients, physicians and community pharmacies were the primary sources of information, while nearly half of respondents reported receiving no information. Satisfaction with the information provided varied.

Conclusion: Patient awareness of vitamin B₁₂ deficiency risk and recommended monitoring during long-term metformin treatment remains notably low across the three participating

pharmacy branches in Denmark. These findings highlight a clear gap between clinical guideline recommendations and patient knowledge. The results provide valuable insights and sharing these findings with other community pharmacies may support the development of systematic counselling practices and improve preventive care. Findings emphasize the important role of community pharmacies in delivering targeted counselling, adequate information, and identifying warning signs and potential medicine-related problems. The results also underscore the importance of routine screening questions to identify at-risk patients and indicate the need for increased focus on this patient group. Based on these findings, local pharmacy-based initiatives were implemented, including staff education, systematic patient questioning regarding vitamin B₁₂ monitoring, and the development of educational materials to ensure patient safety and preventive care among these patients.

Evaluating the impact of supplier relationship management as a strategy for competitive advantage in the pharmaceutical sector: Case study of a chain pharmacy in Ghana

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Background: Effective Supplier Relationship Management (SRM) is pivotal in the pharmaceutical sector, as it ensures product quality, regulatory compliance, and competitiveness. Given the increasing complexity of pharmaceutical supply chains in developing economies such as Ghana, exploring the role of SRM in enhancing business performance is critical. This study addresses gaps in research by examining how SRM influences supplier satisfaction and business competitiveness in the Ghanaian pharmaceutical industry, using East Cantonment Pharmacy Limited (ECPL) as a case study.

Objective: This study aims to assess the current state of supplier relationships in the Ghanaian pharmaceutical industry. It evaluates the nature of these relationships, their impact on supplier satisfaction, and their contribution to business competitiveness. The study hypothesizes that stronger supplier relationships correlate with enhanced sales performance and customer satisfaction.

Method: A mixed-methods approach was employed, using a convergent parallel design. Quantitative data was collected through surveys with 60 respondents, while qualitative insights were obtained through interviews with suppliers and ECPL staff. Data were analyzed using descriptive statistics and thematic content analysis to understand supplier dynamics, satisfaction, and competitiveness.

Results: The results demonstrate that supplier relationships at ECPL are predominantly collaborative, characterized by mutual goal alignment. Respondents rated the overall quality of the relationship between the company and its suppliers an average of 1.34 on a scale of 1 to 5, where 1 represents "very good" and 5 represents "very bad," indicating a generally positive perception. However, the study identified certain challenges as operational bottlenecks, including delays in invoicing, internet connectivity issues, and transportation problems. Additionally, some relationships remained strictly transactional, which limited the depth of strategic partnerships. The study found that bad relationships with suppliers caused delays in product deliveries, which made customers leave. For example, one respondent stated, "Negative supplier-company relationships can cause delays in product deliveries, prompting customers to seek the same products from competitors at inflated prices." Quantitative analysis revealed that supplier satisfaction was strongly influenced by effective procurement communication (mean = 4.13), proactive management efforts to strengthen partnerships (mean = 4.07), and collaborative sustainability initiatives (mean = 3.95). Conversely, formal supplier integration mechanisms (mean = 3.42), structured management systems (mean = 3.35), and supplier-led training initiatives (mean = 2.08) were underdeveloped, indicating areas requiring strategic enhancement.

Conclusion: The study concludes that strong SRM practices are essential for achieving a competitive advantage in the pharmaceutical industry. While ECPL's supplier relationships foster collaboration, improvements are needed in formalizing systems and addressing communication gaps. The research advocates for enhanced communication, the implementation of supplier management systems, and the adoption of digital technologies to improve SRM. By embracing these recommendations, the pharmaceutical industry can optimize supplier relationships, mitigate supply chain risks, and unlock sustainable competitive advantages, ultimately benefiting patients and stakeholders alike.

What change in adherence scores reflects true behavioural improvement? First European nationwide head-to-head evaluation of MMAS-8 and MMAS-8R in community pharmacy follow-up

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Background: Self-reported medication adherence measures are widely used in community pharmacy practice to monitor patients and evaluate pharmacy-led adherence interventions. However, guidance on how to interpret longitudinal changes in adherence scores is largely absent, particularly in distinguishing true behavioural change from measurement error during routine follow-up. The revised 8-item Morisky Medication Adherence Scale (MMAS-8R) was developed to address known limitations of the original 8-item Morisky Medication Adherence Scale (MMAS-8), yet comparative real-world evidence from European community pharmacy settings remains limited. This study aimed to conduct the first European nationwide head-to-head evaluation of MMAS-8 and MMAS-8R, examining their reliability, stability of adherence classification over time, and the interpretability of longitudinal adherence score changes in routine community pharmacy monitoring.

Method: A nationwide, multicentre study was conducted in Greek community pharmacies, including urban, rural, and island regions. Adults receiving long-term pharmacotherapy completed validated Greek versions of MMAS-8 and MMAS-8R (N=394). A test-retest subsample completed repeat assessment after 10–14 days (n=137). Internal consistency was assessed using Cronbach's alpha and McDonald's omega. Test-retest reliability was evaluated using intraclass correlation coefficients (two-way mixed-effects, absolute agreement). Agreement and temporal stability of categorical adherence classification (low, medium, high) were assessed using Cohen's kappa and quadratic-weighted kappa. Absolute measurement error was quantified using the standard error of measurement and the smallest detectable change at 95% confidence. Use of both instruments was authorised by the scale developer and Adherence Cartography(TM).

Results: Both instruments demonstrated acceptable internal consistency (MMAS-8: $\alpha=0.705$; MMAS-8R: $\alpha=0.732$) and very strong convergent validity ($r=0.913$, $p<0.001$), supporting measurement of the same adherence construct. Test–retest reliability was good for both tools (MMAS-8 intraclass correlation coefficient=0.804; MMAS-8R=0.814; both $p<0.001$). Temporal stability of categorical adherence classification was consistently higher for MMAS-8R ($\kappa=0.649$; weighted $\kappa=0.786$) than for MMAS-8 ($\kappa=0.574$; weighted $\kappa=0.732$). Absolute reliability analyses showed low measurement error for both scales (standard error of measurement ≈ 0.71 – 0.74), yielding a smallest detectable change of approximately two points (MMAS-8 ≈ 1.97 ; MMAS-8R ≈ 2.05). Bland–Altman analyses indicated minimal systematic bias and limits of agreement consistent with this two-point threshold.

Conclusion: This first European nationwide head-to-head comparison demonstrates that although MMAS-8 and MMAS-8R capture the same adherence construct, an empirically derived two-point smallest detectable change provides a practice-relevant decision threshold for interpreting longitudinal adherence score fluctuations. Adherence score changes below this level during follow-up are likely attributable to measurement error rather than true behavioural improvement and should therefore be interpreted cautiously when monitoring patients or evaluating pharmacy-led adherence interventions in real-world practice.

Behavioural instability and fragility as predictors of medication adherence: insights from the first application of the Adherence Cartography behavioural assessment tool

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Background: Medication adherence is a key determinant of clinical outcomes in chronic disease management, yet traditional approaches often rely on static demographic or

clinical predictors that fail to capture the dynamic nature of patient behaviour. Emerging behavioural frameworks suggest that fluctuations in daily routines and sensitivity to environmental changes may influence adherence patterns. Concepts such as behavioural instability and behavioural fragility provide a dynamic perspective on treatment behaviour and may offer improved predictive insight into adherence outcomes. This study aimed to investigate the predictive role of behavioural instability, behavioural fragility, and structural support factors in medication adherence among adults receiving long-term pharmacotherapy, using a novel behavioural assessment framework.

Method: A quantitative cross-sectional study was conducted among 277 adults receiving chronic medication therapy in Greece. Participation was voluntary and anonymous. Data were collected using the Adherence Cartography Questionnaire, a novel 22-item structured self-report instrument designed to assess behavioural and structural determinants of medication adherence and applied for the first time in this study population. The questionnaire generates four indices: Behavioral Architecture and Stability Evaluation (BASE), Measurable Variance and Movement Term (MVMT), Social and Treatment Relational Access and Terrain Assessment (STRATA), and Intentional Non-Adherence (INA). Predicted adherence was estimated using the Predictive Emergence Index (PE). Descriptive statistics were calculated, and normality was assessed using the Shapiro–Wilk test. Associations between variables were examined using Spearman correlation, and group differences across INA categories were analysed using the Kruskal–Wallis test. Multiple linear regression analysis was conducted to evaluate predictors of predicted adherence. Use of all instruments was authorised by the developer and Adherence Cartography™.

Results: Participants demonstrated generally high predicted adherence (mean PE = 0.71). Intentional non-adherence showed a strong negative association with predicted adherence ($r = -0.60$, $p < 0.01$), while behavioural stability (BASE), behavioural variability (MVMT), and structural support (STRATA) showed significant positive correlations with predicted adherence ($r = 0.48$, 0.57 and 0.60 respectively; $p < 0.01$). Significant differences in predicted adherence were observed across INA categories (Kruskal–Wallis $\chi^2 = 99.32$, $p < 0.001$). Regression analysis indicated high explanatory power of the model ($R^2 = 0.96$), highlighting the strong predictive contribution of behavioural indices to adherence outcomes.

Conclusion: Medication adherence appears strongly influenced by behavioural stability, environmental support, and intentional treatment decisions. The findings highlight the potential value of behavioural instability and fragility as early indicators of adherence vulnerability. Application of the Adherence Cartography framework may support earlier identification of patients at risk of non-adherence and contribute to the development of targeted behavioural and clinical interventions aimed at improving long-term treatment adherence.

A novel multidisciplinary dermatological care model for managing patients with acne and atopic dermatitis: Consensus guidance for pharmacists

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Background: Acne and atopic dermatitis significantly impact patient quality of life, requiring long-term management through medications and lifestyle changes. Recent Canadian legislation has expanded the pharmacist's role in treating these conditions. To address care gaps, panels of 22 dermatologists and pharmacists across four provinces developed a collaborative framework. This initiative formally defines how pharmacists can manage mild-to-moderate cases alongside community dermatologists, creating a structured approach to enhance long-term care, support provincial healthcare shifts, and ultimately optimize patient outcomes.

Method: Key questions were identified based on current patient journey gaps in acne and AD care, focusing on patient initial assessment, follow-up, communication, and multidisciplinary collaboration between the dermatologist and pharmacist.

Results: Using the Nominal Group Technique (NGT), consensus statements emerged for both acne and AD management: Acne Statements: Acne Burden and Treatment Goals: Acne impacts patients; treatments aim to clear lesions, prevent scarring, and improve quality of life. Acne Pathogenesis: Acne results from abnormal keratinization, excess sebum, *C. acnes* proliferation, and inflammation. Severity assessment: Pharmacists should use standardized tools and patient-reported outcomes to monitor acne severity and treatment effectiveness. Pharmacist Role in Acne Care: Pharmacists should initiate, optimize, and monitor therapy, including recommending skincare and educating patients. Initial Assessment: Pharmacists should conduct or supervise standardized in-person assessments, documenting clinical presentation, history, and goals. Follow-up Assessment: Pharmacist-led follow-up should assess changes, goals, and adherence using visual tools and scoring systems. Skincare Recommendations: Pharmacists should guide patients on skincare and cosmetics to optimize treatment and manage side effects. Interprofessional Collaboration: Pharmacists should facilitate communication with other healthcare providers involved in the patient's care. Training and Guidance: Enhanced training and guidance on acne medications and best practices are crucial for pharmacists.

Workflow Integration: Integrating acne-related services into pharmacy workflow is important for effective patient management. Treatment Guidelines: Acne management should follow established Canadian or American Academy of Dermatology guidelines. Atopic Dermatitis (AD) Statements: Burden and treatment goals: AD is a complex disease impacting quality of life, involving skin barrier, immune, and environmental factors. Assessment: Standardized tools and patient-reported outcomes are essential for monitoring AD severity and treatment effectiveness. Pharmacist Role: Pharmacists should manage AD through assessment, treatment recommendations, monitoring, and education. Initial Assessment: Pharmacists should conduct or supervise a standardized in-person AD assessment, documenting presentation, history, and goals. Follow-Up Assessment: Pharmacists should conduct or supervise standardized virtual or in-person follow-ups to monitor response, adjust therapy, and evaluate adherence. Interprofessional Collaboration: Pharmacists should facilitate communication with other involved healthcare providers when appropriate. Skincare Care Recommendations: Pharmacists should provide individualized skincare recommendations (cleansers, moisturizers) to optimize treatment outcomes and manage AD flares. Training: Clinical training and guidance on AD medications and assessment are crucial for pharmacists. Workflow Integration: Integrating AD services into pharmacy workflow is important for effective patient management. Guideline Adherence: AD management should follow established Canadian or American Academy of Dermatology guidelines.

Conclusion: Without a harmonized Canadian dermatological pharmacy framework, this consensus guidance provides a novel blueprint for collaborative pharmacist-dermatologist management of acne and AD, enhancing patient experiences and outcomes.

A Canadian perspective on the role of dermocosmetics in acne management: Clinical considerations for healthcare professionals

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Background: Acne affects a significant portion of the Canadian population. Although standard treatments are essential, the role of dermocosmetic regimens remains under-addressed in previous national guidelines. Following new international recommendations emphasizing dermocosmetics, this paper provides a Canadian perspective on their integration into clinical practice. We offer practical considerations adapted for the national context to improve

patient outcomes and complement existing management strategies.

Method: An expert panel, comprising Canadian and international dermatologists, was convened to synthesize current literature and adapt international consensus recommendations to the Canadian context. A rigorous literature search was conducted on PubMed, limited to randomized controlled trials (RCTs) published between 2014 and January 2025. Studies were categorized into monotherapy and adjunctive therapy for acne. Expert discussions addressed Canadian gaps and needs and integrated these findings with Canadian clinical considerations.

Results: Dermocosmetics were found to be effective as monotherapy for mild-to-moderate acne and for maintenance, and as adjunctive therapy to boost efficacy and mitigate side effects. In monotherapy, dermocosmetics were found to improve global acne severity and lesion counts, often with superior tolerability compared to some traditional treatments. As adjunctive therapies, dermocosmetics significantly enhanced the efficacy of medical treatments and mitigated side effects (e.g., retinoid-induced irritation), thereby improving patient adherence and overall outcomes. Specific dermocosmetic ingredients (e.g., azelaic acid, salicylic acid, 2-MNG) were also identified as beneficial for preventing and treating AIH. The panel developed Canadian-specific recommendations for these applications.

Conclusion: The integration of dermocosmetics is an important adjunctive strategy for optimizing patient outcomes and adherence in acne management. This paper offers valuable, Canadian-specific clinical considerations for HCPs, providing a practical framework to effectively incorporate dermocosmetics into their clinical practice and improve patient journeys and outcomes in acne management across Canada

Community pharmacy telephone counselling: national call pattern data and interactional analysis of real-life calls

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Background: Telephone counselling is a central but under-documented part of community pharmacy services in Denmark. Pharmacy staff handle many daily calls from patients, relatives and healthcare professionals, yet little is

known about the content or communicative quality of these interactions. Understanding both the scale of telephone activity and the interactional dynamics in calls is essential for strengthening remote pharmacy counselling. The purpose of the study was to 1) describe the scope and nature of telephone enquiries to Danish community pharmacies and 2) examine how pharmacy staff achieve customer centred communication during real life telephone consultations.

Method: This study integrates two complementary data sets: 1. A total of 3,971 calls were registered across 27 community pharmacies over a five-day period using a structured electronic registration tool. Data included caller type, inquiry topic and the staff's handling of the call. 2. 11 audio-recorded telephone consultations (total duration 1h 12m 32s) were analysed using a six-dimension interactional framework focusing on interaction structure, tone and relation, personalisation, customer-centring, communicative challenges and medium affordances. Descriptive statistics will summarise the national data set and conversation analysis informed the qualitative findings.

Results: Preliminary data indicate a high volume of calls across participating pharmacies, but analyses of caller types, inquiry themes and call handling are ongoing. These results will be presented at the Congress and discussed along with the qualitative results. Results from the audio-recorded telephone consultations show that telephone consultations unfolded in real time, allowing pharmacy staff to adjust explanations, tempo and sequencing directly in response to customers' reactions. Interaction was typically structured step by step, with staff guiding customers through decision points and summarising along the way. Tone and relational work were primarily carried by vocal cues. Staff used normalising statements, reassurance and strategic pauses to signal active listening and empathy, supporting a sense of presence despite the physical distance. Personalisation was expressed through real-time adaptation of vocabulary, pace and detail, enabling staff to calibrate information precisely to the customer's needs. This included shared action sequences such as navigating a website together during the call. Customer-centring was achieved through confirmation markers, reformulations and frequent checks of shared understanding. Communicative challenges such as uncertainty or incomplete understanding were typically resolved immediately through clarifying questions. Unlike written channels, telephone interactions allowed rapid correction without follow-up messages. The affordances of the medium supported relational closeness, as tone of voice, rhythm and pausing played central roles in establishing trust and guiding the consultation. While real-time interaction offered clear relational advantages, it also required continuous attentional coordination and rapid decision-making.

Conclusion: The ongoing national call mapping analysis will provide a broader understanding of the scale and nature of telephone enquiries at Danish community pharmacies. Telephone counselling provides good conditions for customer centred communication in community pharmacies. Real time

interaction enables staff to adjust advice dynamically, build rapport through vocal cues and ensure shared understanding throughout the call. The results highlight the importance of targeted training in vocal communication, sequencing and empathic interaction to strengthen the quality of remote pharmacy services.

Use of artificial intelligence in Danish community pharmacies: A national survey on practice, attitudes and perceived role changes

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Background: Artificial intelligence (AI) is rapidly transforming healthcare delivery, including pharmacy practice, where international evidence points to opportunities for enhancing medication counselling, workflow optimisation and clinical decision support. Yet little is known about how AI is currently applied in community pharmacies in Denmark, and how its adoption influences pharmacy staff's perception of their professional role and the evolving role of the pharmacy. Understanding this is essential as AI-enabled tools become increasingly embedded in digital platforms used in community pharmacy settings. The objective of the study is to map the use of AI in Danish community pharmacies, including (1) the extent of AI use, (2) the type of tasks where AI is used, (3) staff attitudes towards AI and (4) perceived changes in professional identity and pharmacy practice following AI use.

Method: A national electronic survey was developed and pilot-tested in February 2026. The target population includes pharmacists, pharmacy technicians, pharmacy owners, pharmacy managers and students working in Danish community pharmacies. The questionnaire contains items on: •Background characteristics •General AI use (private vs. professional) and frequency of use •Type of tasks where AI is used, including customer counselling, medication reviews, vaccination, teaching, scheduling, leadership, personal learning, etc. •Integration of AI in pharmacy systems such as scheduling, meetings, telephone calls and e-commerce •Perceived impacts of AI on daily work, professional role, future pharmacy practice, opportunities and concerns

(open-ended questions). The survey will be distributed via the Danish Network for Community Pharmacy Practice Research and Development (NUAP) and LinkedIn in March-April 2026. Data will be analysed using descriptive statistics for closed-ended items and thematic analysis for narrative responses.

Results: The study is ongoing, and the results will be presented at the conference. We expect variation in whether staff recognise AI within existing digital systems (e.g. telephone and planning tools). Some staff may perceive AI as improving efficiency, expanding access to knowledge and providing reassurance in complex counselling situations, while others may describe concerns regarding information reliability, overreliance, patient trust and potential de-skilling.

Conclusion: This will be the first nationwide study examining real-world AI use in Danish community pharmacy practice. By integrating quantitative data on use patterns with qualitative insights on attitudes, opportunities and concerns, the study will provide essential evidence on how AI affects workflows, perceived professional identity and the evolving function of community pharmacies. Findings will help inform national strategies for competence development, responsible AI implementation and sector-level dialogue about how pharmacies can remain central to safe, patient-centred medication management in an AI-enabled health system.

The role of Canadian & USA community pharmacies as healthcare hubs in underserved communities

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Background: The NHS 10-Year Health Plan for community pharmacy (CP) aims to expand clinical services, enhance patient care, and integrate pharmacies into a broader healthcare framework. The Plan emphasises the role of (CPs) as healthcare hubs, promoting their neighbourhood health service remit in managing long-term conditions (LTCs) and preventive public health (PH) services like vaccination. Canada's "Pharmacy Care Clinics" are cited in the plan particularly in relation to their support with minor ailments through to chronic disease management.

Objective: The purpose of this observational research was to investigate pharmacist and pharmacy technician (PT) scopes of practice and the range of services provided by novel CP primary care clinics[®] (CPPCCs) and CP care clinics[®] (CCs) in two Canadian provinces, Nova Scotia, and Ontario, respectively. Furthermore, CP premises in New York state and

Washington DC were visited to compare CP services across North America.

Method: Observational visits were conducted over a five-week period during June and July 2025. Independent and multiple CPs were visited across Nova Scotia, Ontario, New York, and Washington DC. The visits identified the types of care clinics, range of clinical services, automation, pharmacist and PT scope, digital integration, independent prescribing (IP), diagnostic tools and use of AI scribes.

Results: Across Nova Scotia CPPCCs enhance access to local CP healthcare services in underserved neighbourhoods. The clinics are located in areas with the highest number of people without a family doctor. Pharmacists' scopes have expanded to manage and prescribe for minor ailments (MA), publicly funded vaccinations, intramuscular (IM) and subcutaneous (SC) injections and LTCs. The services include assessment and prescribing for MAs and LTC management (e.g. diabetes, asthma, COPD, mental health & addictions contraception, and cardiovascular disease). In Ontario, CP CCs are delivering a range of pharmacy services and some of the pharmacists have extended their scope to support LTC consultation services (e.g. diabetes) by entering into collaborative practice agreements (CPAs). The services provided include medication therapy management (MTM), MA prescribing, vaccination services, SC and IM injections, LTC management, and point of care (PoCT) testing. It was noted that PoCT can assist in identifying higher risk patient populations. Canadian pharmacy technicians were providing medical device counselling, vaccinations and final accuracy checks. US CPs have expanded their services beyond traditional medication dispensing to include MTM, vaccinations, diagnostics, health screening, LTC management, CPAs with primary care physicians and care co-ordination/navigation.

Conclusion: The successful expansion of CPPCCs and CCs in Nova Scotia and Ontario demonstrate the importance of convenient and accessible CP healthcare hubs particularly in underserved neighbourhoods. The CPs visited had expanded their services from dispensing to the delivery of PH, MA, vaccination, and the identification and management of LTCs. Enabling factors include the adoption of automation, CP digital integration, electronic local health record (eHR) access, AI scribe adoption, PoCT diagnostic integration, changes to pharmacist initial education and training, legacy staff continuing professional development and collaboration with other primary care physicians.

Closing knowledge gaps in migraine management among community pharmacists: Impact of the migraine-friendly pharmacy certification program

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Background: Migraine is a prevalent and disabling neurological disorder that substantially affects quality of life, productivity and healthcare utilization. Community pharmacists are often the first healthcare professionals consulted by individuals experiencing headache symptoms and therefore play a critical role in patient counseling and early recognition. Accordingly, targeted educational interventions may help strengthen pharmacists' competencies in migraine management and improve patient support and treatment outcomes in community pharmacy settings. The Migraine-Friendly Pharmacy Certified Training Program was developed as a structured educational initiative aimed at improving migraine-related knowledge among community pharmacists based on an interdisciplinary collaboration between the Effective Pharmacy Society and the Global Migraine and Pain Society.

Method: This observational study analyzed data from pharmacists participating in the Migraine-Friendly Pharmacy Certified Training Program between December 2025 and February 2026. Prior to program initiation, pharmacists received online migraine-focused education through five standardized online modules covering migraine pathophysiology, triggers, diagnosis, pharmacological and non-pharmacological treatment, prevention and urgent referral criteria. Knowledge acquisition was assessed using a 15-item multiple-choice test administered before (pre-test) and after (post-test) completion of the training modules. Certification was granted to pharmacists who completed the full educational curriculum and achieved a passing score on post-training assessment. Descriptive analyses were conducted using aggregated program-level data to evaluate participation, certification rates, and changes in knowledge scores over the three-month implementation period.

Results: A total of 110 pharmacists participated in the program during the study period and 67 pharmacists obtained certification, corresponding to an overall certification rate of 60.9%. The mean baseline knowledge score across participants was approximately 86%, indicating

relatively strong baseline familiarity with fundamental migraine concepts. Following completion of the training program, the mean post-training knowledge score increased to approximately 93–94%, corresponding to an average knowledge gain of approximately 5–7 percentage points. Post test performance remained consistently high throughout the three-month period, supporting robustness of both the educational content and assessment methodology. The most substantial gains were observed in complex clinical areas, including differentiation of headache types, mechanism-based treatment approaches and identification of conditions requiring urgent medical evaluation, where correct response rates increased by approximately 15–30 percentage points compared with baseline. In contrast, questions related to migraine pharmacological management demonstrated the lowest baseline accuracy, with an average pre-training correct response rate of approximately 48%. Although post test performance in this domain improved to an average correct response rate of approximately 61%, medication related questions remained the lowest performing area relative to other assessed topics.

Conclusion: The Migraine-Friendly Pharmacy Certification Program effectively improved pharmacists' migraine-related knowledge and demonstrated consistently high post-training performance. These findings highlight the value of structured pharmacist-focused educational interventions in strengthening migraine care in community pharmacy settings. While the program successfully addressed multiple critical knowledge gaps, pharmacological management of migraine remained the most frequently misunderstood domain, underscoring the need for continued emphasis on medication-focused training to further enhance pharmacists' role in safe and effective migraine management. The Migraine-Friendly Pharmacy Certification Program is currently ongoing and continued implementation is expected to provide further evidence regarding its sustained educational impact.

Mind the gap: Addressing 'drug holidays' in cardiovascular patients through a novel pharmacy dialogue tool

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Background: Cardiovascular diseases (CVD) are frequently asymptomatic, which may lead patients to mistakenly believe they are cured once their clinical measurements, such as blood pressure, have stabilised. This perception creates a significant risk of 'Drug Holidays'—defined as deliberate or accidental medication pauses—which can lead to severe complications, including thrombosis and stroke. In the community pharmacy setting, there is a lack of structured methods to identify these hidden adherence barriers. The objective of this study was to investigate the prevalence and

root causes of drug holidays among CVD patients at Steno Pharmacy and to develop a practical tool to strengthen the ability of pharmacy staff to proactively detect and prevent these pauses. It was hypothesised that a structured dialogue tool would more effectively uncover hidden barriers than traditional, reactive counselling.

Method: A mixed-methods study was conducted at a community pharmacy in Denmark. Quantitative data were collected via questionnaires distributed to CVD patients (N=21) and pharmacy staff (N=18). Additionally, five qualitative patient cases were gathered through semi-structured interviews and observations at the pharmacy counter to capture real-life behavioural patterns and misconceptions. Data management involved a comparative analysis of patient-reported reasons for non-adherence and staff assumptions to identify discrepancies. A pilot study was initially performed with four patients and two cases to ensure the precision of the research instruments. All participants remained anonymous, and participation was entirely voluntary.

Results: The investigation confirmed that drug holidays are a prevalent phenomenon, with 100% of the surveyed staff encountering the issue regularly. Among the patients, 29% reported not taking their medication as recommended, and 19% admitted to deliberate pauses to "give the body a rest". A profound discrepancy was identified between staff assumptions and patient realities: 61% of the staff presumed financial constraints were a primary barrier, yet 0% of the patients cited cost as a reason for their pauses. Instead, patients highlighted forgetfulness (43%), fear of side effects, and dangerous misconceptions about their chronic condition. Furthermore, while 94% of the staff recognised the clinical relevance of the topic, only 39% felt sufficiently equipped to manage the dialogue. Most staff members (16 out of 18) defaulted to providing general information rather than performing a structured needs assessment.

Conclusion: The study concludes that preventing drug holidays requires a fundamental shift from passive informing to active screening at the pharmacy counter. The developed 'Dialogue Card' and associated flowchart provide a standardised framework for staff to distinguish between unintentional forgetfulness and intentional pauses through a specific screening question regarding weekends and holidays. This research demonstrates that even well-intentioned professional advice may fail if the underlying patient motivations are not systematically uncovered. The findings suggest that this person-centred approach could be integrated into national pharmacy strategies to enhance patient safety. Future work should evaluate the effectiveness of the tool across other chronic conditions, such as diabetes or asthma, to determine if the screening logic remains universally applicable.

Unlocking millions of clinician hours: A time-and-motion study of community pharmacy practice

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Background: Across Canada, community pharmacists have gained an expanded scope of practice, including prescribing for minor ailments, administering injections, and providing medication management services, yet over 6.5 million Canadians remain without a regular primary care provider. At the same time, community pharmacy workflows were largely designed for a dispensing-centric model and may constrain pharmacists' ability to provide licensed, patient-facing clinical care. Existing private time-and-motion evaluations suggest underutilization of pharmacists' clinical skills, but there is no publicly available, peer-reviewed Canadian evidence describing how pharmacists actually allocate their time across licensed and non-licensed activities. Addressing this gap is essential for evidence-informed workforce planning, workflow redesign, and integration of community pharmacists into primary care delivery models.

Objective: This study aims to quantify the proportion of community pharmacists' workday devoted to activities requiring a pharmacist's license and to compare observed clinical time with pharmacists' own estimates of their clinical activity. We hypothesize that community pharmacists spend only a small fraction of their workday on licensed clinical activities, indicating substantial untapped clinical capacity.

Method: We conducted a time-and-motion observational study in community pharmacies across Saskatchewan, Ontario, and Quebec, including urban, suburban, and rural settings and both independent and corporate models. Licensed community pharmacists were shadowed for full shifts by trained pharmacy student observers who recorded tasks using standardized categories in real-time. Activities requiring a pharmacist's license were defined as direct patient care, clinical prescription verification, interprofessional collaboration, and administration of regulated injections. Following observation, pharmacists

completed a structured questionnaire capturing their perceived proportion of time spent on clinical activities and identifying priority clinical services they would deliver if workflow barriers were reduced. Descriptive analyses are being used to quantify observed time allocation and compare observed and perceived clinical time.

Results: Data analysis is ongoing. Preliminary observations indicate that pharmacists devote a relatively small proportion of their workday to activities requiring a pharmacist's license, with a substantial share of time spent on operational and administrative tasks. Early patterns also suggest misalignment between pharmacists' perceived and observed clinical time. Final analyses will quantify the proportion of time allocated to licensed activities and describe pharmacists' preferred clinical services in a redesigned workflow.

Conclusion: This study will provide the first publicly available Canadian data on community pharmacists' clinical time utilization. By establishing a baseline for how pharmacists currently spend their time, our findings will inform workforce planning, practice model redesign, and policy discussions on the role of community pharmacists in alleviating primary care access gaps. Optimizing community pharmacy workflows has the potential to unlock meaningful clinical capacity within the existing workforce, support pharmacists to practice at the top of their license and enhance their contribution to primary care teams. Future work will focus on testing workflow redesign strategies and policy levers that enable delivery of expanded clinical services in community pharmacy.

From counting capsules to clinical consultations: Leveraging artificial intelligence to reclaim practitioner time and enhance patient outcomes

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Background: Now more than ever, community pharmacy faces a critical workforce challenge. Escalating administrative burdens and increased prescription volumes often compromise patient-directed care. Upon entering practice, the author faced this exact situation. Meticulous observation revealed that administration comprises numerous small tasks laden with complex regulatory caveats. Junior staff frequently struggle with these nuances, carrying a high risk of audit. Consequently, senior pharmacists are continually diverted to assist them, stifling innovation and consuming essential clinical time. Seeking a solution, the author embarked on a fifteen-year journey of self-education, developing increasingly sophisticated software to assist staff, safeguard

patient safety, and protect profitability, so more time can be invested in performing clinical duties. This abstract details the transition from an underutilised clinician to an award-winning leader of patient care, achieved by creating technology that bridges the gap between administrative compliance and clinical excellence.

Method: The initiative commenced with the author's self-directed learning of software development to build rudimentary assistive tools for local dispensary use. As these tools evolved, a broader opportunity emerged: to systematically elevate junior staff performance and permanently alleviate senior staff fatigue. However, transitioning from isolated clinical tools to a scalable infrastructure presented significant barriers, including navigating a risk-averse culture, securing funding, and establishing networks to ensure the project advanced beyond the pilot stage. To overcome these hurdles and ensure rigorous regulatory compliance, the author forged strategic collaborations. The foundational code was systematically integrated by a team of technology pioneers, encompassing former Fortune 500 executives and a lead developer of a ubiquitous global voice assistant. This collaboration introduced Artificial Intelligence (AI) to synthesise the tools into a commercial-grade solution while building additional functionality.

Results: Implementing this scalable digital platform yielded transformative outcomes, primarily by reclaiming significant clinical time. Freed from continuous administrative oversight, the author redirected this capacity towards direct patient assessment. This technological adoption facilitated a substantial increase in the volume of clinical services and community health initiatives, while offering robust protection against third-party clawbacks. Crucially, the reclaimed time allowed for deeper patient engagement and improved rapport, as the pharmacist could dedicate the time required to fully understand and advise on complex health concerns. This shift enabled the sustained operation of a pharmacist-led walk-in clinic within a First Nations health centre and the enhancement of comprehensive medication review programmes. These clinical expansions directly contributed to the author receiving the Excellence in Patient Care Award from the British Columbia Pharmacy Association (BCPhA) and the Priority of Thanks from St John Ambulance.

Conclusion: The journey from analysing dispensary behaviours to leading community health initiatives illustrates that profound clinical success is attainable by any pharmacist willing to integrate assistive technology. By embracing digital tools to manage administrative complexities and passively support staff development, practitioners can universally elevate their practice, cultivate deeper patient relationships, and execute a higher volume of impactful clinical services. This tech-enabled, patient-focused model embodies the "One Pharmacy" vision, demonstrating how the strategic adoption of software empowers pharmacists to build more resilient, equitable health systems.

Assessing community pharmacy access across Minnesota

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Background: The resources provided by community pharmacies have expanded dramatically in the last decade. Services such as vaccinations, contraceptive care, harm reduction services, medication management, and point-of-care screening and testing have all made healthcare more accessible in the community space. Additionally, access to community pharmacy has been tied to improved health outcomes. Despite this, community pharmacies are closing at an alarming rate. Lower reimbursement rates, staffing shortages, and financial strain have all led to a tumultuous environment for the sustainability of community pharmacy. This has led to the increase of pharmacy closures across the country, creating pharmacy deserts, areas where communities lack access to pharmacy services. This threat to pharmacy access presents a larger problem, the loss of community healthcare resources. This work aims to explore community pharmacy access across Minnesota, a diverse state containing both extremely rural and urban areas, across a range of time. Through this, the definitions of 'at risk' communities and 'keystone pharmacies' emerged as a way to identify who may be at a heightened risk of closure and who may benefit from additional support and resources. In addition to this, conversations with key pharmacy stakeholders involved with closures in varying settings led to the identification of perceived key factors that led to pharmacy closures.

Method: In partnership with the Minnesota Department of Health and the Minnesota Board of Pharmacy, a research group out of the University of Minnesota College of Pharmacy conducted a retrospective data review of community pharmacy openings and closures across Minnesota between October 2009 and August 2025 using pharmacy license activity status and ERSI ArcGIS software to geocode active community pharmacies across 6 time points at the census tract level. Keystone pharmacies were defined as pharmacies serving an 'at-risk' census tract that would become a pharmacy desert if that pharmacy were to close. Qualitative interviews were conducted with pharmacy stakeholders (pharmacy leaders, pharmacy managers, and staff pharmacists) in diverse environments (independent, chain, institution) to better understand the experience of keystone pharmacies and pharmacy closures.

Results: Between October 2009 and August 2025, 255 community pharmacies closed while only 99 new pharmacies opened, a net loss of 156 (15%). The number of census tracts classified as pharmacy deserts increased from 44 to 58, with

the population living in pharmacy deserts increasing from 142,659 to 189,222. Of the remaining 867 pharmacies, 129 (15%) were identified as keystone pharmacies in 2025. Key themes around pharmacy closures included financial strain, operational convenience, and organizational structure and support.

Conclusion: Pharmacy access across Minnesota has worsened in the last 15 years, leaving fewer pharmacies accessible to the same geography. There has been an increase in the number of keystone pharmacies, indicating a continuation of the current trend of closures. Conversations with key pharmacy stakeholders indicate that there is a perceived lack of support both at the organizational and policy level, supporting the idea of finding different avenues to advocate for the restructuring and resource provision to community pharmacies.

Nasal decongestant sprays in community practice: Supply, overuse and safer-use strategies

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Background: Topical nasal decongestant sprays provide short-term relief from nasal obstruction; however, prolonged use may result in rebound congestion (rhinitis medicamentosa). Despite ongoing debate regarding their regulatory classification, limited evidence exists on how these medicines are supplied and safeguarded in routine community pharmacy practice.

Objective: To describe UK community pharmacists' experiences of supplying nasal decongestant sprays; estimate suspected prolonged use; evaluate patient awareness and packaging clarity; identify barriers to counselling; and explore views on potential reclassification.

Method: A cross-sectional online survey of UK community pharmacists was conducted in November 2025. Quantitative data were collected on supply frequency, suspected overuse beyond 7 days, patient awareness, pharmacist interventions, counselling barriers, and regulatory views. Free-text responses were analysed thematically.

Results: Data from 309 pharmacists were analysed. Sprays were supplied frequently (44% weekly; 27% daily). Suspected use beyond the recommended 7-day limit was encountered monthly or more often by 68%. Half of respondents estimated that fewer than 25% of users exceed 7 days, whereas 22% believed that more than 50% do. Low patient awareness of

rebound congestion was reported by 59%. Most pharmacists (74%) indicated that packaging could be clearer regarding the 7-day limit (18% "not clear"; 8% "clear"). Overall, 63% had intervened in suspected dependency. Common strategies included recommending saline (43%), steam or menthol inhalation (34%), switching to intranasal corticosteroids (28%), and refusing sale (28%). Key barriers to counselling were patient resistance (66%), time pressures (62%), and staffing constraints (54%). Most respondents (58%) opposed reclassification to prescription-only status; however, many supported restricting products from general sale to pharmacy-only availability to ensure supervision.

Conclusion: Misuse and dependency are recognised but generally considered manageable within community pharmacy. Low patient awareness, unclear warnings, and self-selection environments contribute to risk. Pharmacists support clearer front-of-pack 7-day warnings, consistent counselling, public education, and pharmacy-only supply. Ongoing qualitative research using interviews and focus groups will further explore professional decision-making and inform practical safeguards and policy development.

The role of the community pharmacy enabling ADHD patients with maintaining medication adherence during periods of medicine shortages

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Background: Medicine shortages and part fulfillment of deliveries are a well-known challenge within the Danish community pharmacy sector and have significant consequences for patients treated with ADHD medication. Most ADHD medicines belong to regulatory group A\$4, which involves strict prescribing and dispensing regulations, making it even more difficult, in everyday pharmacy practice, to dispense the full quantity of medication on the same day. In the pharmacy it often results in uncollected packages of medicine, potentially leading to lack of medication for ADHD patients and thereby reduced medication adherence. The pharmacy staff also spend significant time attempting to contact ADHD patients or general medical practitioners in order to get the patient to pick up the remaining medication. The aim of this project was to investigate how partial deliveries of ADHD medication can be managed more effectively in community pharmacies, with a focus on supporting patient medication adherence, while also reducing the use of pharmacy staff resource and medicine wastage.

Method: The project was based on short, structured interviews with customers receiving ADHD medication at the pharmacy counter. A questionnaire was developed to investigate both incidence and consequences of lack of ADHD

medication, and the ADHD patients preferred form of contact from the pharmacy. The questionnaire was tested in practice, and adjusted along the way before being used for the final data collection. The interviews were conducted during daily pharmacy operations by pharmacy staff in November and December 2025. In total, 81 responses were included in the data material. The project was further elucidated through clarifying dialogue with a medical secretary at a general medical practitioner, and a legal advisor from the Danish Association of Pharmacies.

Results: The results showed that 59,26% of ADHD patients had experienced not being able to collect their full supply of ADHD medication at once. 41,1% of the patients had at some point been without their medication. Lack of medication had major consequences for ADHD patients' medication adherence, including not taking medication as prescribed, resulting in reduced concentration, and psychological discomfort. A clear majority of ADHD patients preferred to be contacted via SMS regarding remaining deliveries. The dialogue with the medical secretary revealed a less strict approach to ADHD medication in general practice, and the legal advisor from the Danish Association of Pharmacies gave advice on what is legal in terms of contact concerning uncollected medication.

Conclusion: The project demonstrated that partial deliveries of medication can significantly affect ADHD patients' medical adherence and daily functioning. The community pharmacy should work more systematically with remaining deliveries, both to improve pharmacy workflows, but most importantly to support better treatment outcomes for patients with ADHD. A patient information card has therefore been developed to support the targeted communication towards ADHD patients, in the expectation that backorder problems and lack of medication will always persist.

Strengthening safe self-care: Patient knowledge and decision-making on over-the-counter medicines in community pharmacies in Ghana

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Background: Community pharmacies are a major entry point into healthcare in many low- and middle-income countries, including Ghana. Over-the-counter (OTC) medicines support self-care and timely access to treatment; however, inadequate patient knowledge may result in inappropriate use, adverse drug reactions, and unsafe medication practices, particularly among vulnerable populations.

Objective: To assess patients' knowledge, information-seeking behavior, and decision-making patterns regarding

OTC medicines purchased from community pharmacies in Ghana.

Method: A descriptive cross-sectional study was conducted among adults (≥18 years) purchasing OTC medicines from selected community pharmacies. Participants were recruited using convenience sampling. Data were collected using a structured interviewer-administered questionnaire. Data were analyzed using SPSS version 25, with statistical significance set at $p < 0.05$.

Results: A total of 207 participants were included, comprising males ($n = 110$) and 46.9% females ($n = 97$), with a mean age of 41.3 ± 14.2 years. Pharmacy visits for OTC medicines were mostly occasional (44.4%, $n = 92$) or frequent (29.0%, $n = 60$). Pharmacists (84.5%, $n = 175$) and doctors (78.3%, $n = 162$) were the main sources of information on OTC medicines. Although most participants consulted pharmacists during purchase (87.9%, $n = 182$), only 37.2% ($n = 77$) routinely read medicine leaflets. Online information seeking was limited to 31.4% ($n = 65$). Knowledge gaps were evident: only 49.3% ($n = 102$) knew correct dosages, 30.0% ($n = 62$) were aware of side effects, and 22.2% ($n = 46$) knew the safety of OTC medicines during pregnancy. Knowledge of use in children (56.0%, $n = 116$) and the elderly (67.1%, $n = 139$) was, however, higher. Higher educational attainment and healthcare background were significantly associated with better knowledge across all domains ($p < 0.001$).

Conclusion: Although pharmacists play a central role in supporting self-care, substantial gaps in patient knowledge regarding OTC medicines persist. Strengthening patient-centered pharmaceutical care and targeted medication education within community pharmacies is critical to improving safe self-care and rational medicine use.

Dignitude mais: A collaborative path to improve access to health in Portugal

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Background: Dignitude is a Social Solidarity Institution that develops programmes with social impact that enhance the quality of life of Portuguese people. Since 2015, its mission has been to reach vulnerable populations, ensuring a dignified access to medication through its social project: abem: Programme. In 2019, after identifying new necessities

with several partners, DIGNITUDE MAIS was created. This project emerges as a collaborative solution with personalised measures that support different populations in accessing medication and healthcare products. Through innovative and inclusive solutions, DIGNITUDE MAIS seeks to enhance wellbeing and quality of life, while facilitating access to essential healthcare resources for vulnerable communities. Additionally, it ensures transparent and efficient processes for partner organisations, providing beneficiaries with safe, practical, and dignified access to their healthcare needs.

Method: The programme's implementation begins with the identification of a partner entity and the assessment of its specific needs, followed by the establishment of a collaboration protocol between Dignitude, the entity, and the participating pharmacies. Based on the identified requirements, the programme is then designed within Dignitude's Platform, enabling each entity to customise key elements such as eligibility criteria, the healthcare products covered, and the rules for copayment. Subsequently, the programme is activated within the pharmacies' software, ensuring an integrated operation, allowing real-time validation of beneficiaries and products and guaranteeing a safe and efficient dispensation process, applying the partner's copayment instantly. Community pharmacies play a central role by ensuring the dispensation of medication and healthcare products, reinforcing their position as accessible healthcare agents within the community.

Results: The project reinforces access to healthcare and promotes social inclusion by providing specific support measures tailored to different populations, including families with newborns, elderly people, vulnerable families, people with disabilities, etc. It also leads to administrative efficiency through automatic copayment validation, centralized billing operations and beneficiaries' management. These mechanisms simplify and streamline the process for all stakeholders involved, while strengthening the impact of the intervention and increasing the level of trust placed in Dignitude's work. Between February 2019 and December 2025, 30 programmes were implemented in partnership with 21 entities, covering 10 districts and both autonomous regions, reaching 38 municipalities. These programmes addressed different target groups, including five focused on natality, nine aimed at supporting elderly people, seven directed at vulnerable families, and nine designed for other populations such as people with disabilities or low-income workers. Over this period, the initiative supported 68.356 beneficiaries and enabled access to 8.319.374 medicines and healthcare products.

Conclusion: Dignitude plays an important role in promoting dignified and equitable access to healthcare in Portugal. DIGNITUDE MAIS has strengthened the organisation's capacity to respond to emerging needs by developing tailored solutions for different populations and entities. Through collaboration between social, corporate and public sectors, the project promotes efficient and sustainable models that reinforce the role of local entities and community pharmacies in facilitating healthcare access. Supported by Dignitude's

Platform, which ensures efficient and transparent processes, the initiative has demonstrated social impact, contributing to improved access to healthcare and greater wellbeing among vulnerable communities.

Evaluation of the supply chain for essential generic medicines: Case study of Kisenso Health Zone, Kinshasa, DRC

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Background: Developing countries face significant health challenges, including malaria, tuberculosis, and HIV/AIDS. The management of these diseases is hindered by issues related to healthcare personnel, infrastructure, and especially the supply of medicines. The World Health Organization (WHO) advocates for a pharmaceutical policy centered on essential generic medicines (EGMs), which should be available at all times, in sufficient quantities, and at affordable prices. However, a third of the global population lacks reliable access to necessary medicines, with the situation being particularly acute in Africa and Asia. In the Democratic Republic of Congo (DRC), the health system is decentralized and based on primary healthcare. The National Essential Medicines Supply Programme (PNAM) and the Federation of Central Purchasing and Distribution Centres (FEDECAME) coordinate the procurement and distribution of medicines. Despite these efforts, supply chain disruptions, poor stock management, and lack of qualified personnel continue to impede access to EGMs. The purpose of this study is the performance evaluation of the supply chain for essential generic medicines (EGMs) in the Kisenso Health Zone, Kinshasa, Democratic Republic of Congo (DRC). The research identifies major challenges in the selection, acquisition, distribution, and utilisation of EGMs, and proposes recommendations to improve access and management within health facilities.

Method: A cross-sectional descriptive study was conducted in nine health structures, including the central pharmacy, hospital pharmacy, and seven health centre pharmacies. Data were collected through individual interviews using a structured questionnaire covering all stages of the supply chain. The study population consisted of pharmacy managers and staff responsible for EGM management.

Results: Sociodemographic Characteristics Among the respondents, 11.1% were pharmacists and 88.9% were nurses, indicating a predominance of non-pharmacist staff in medicine management roles. Selection of Essential Generic Medicines Only 33.3% of facilities based their selection on the National List of Essential Medicines (LNME), while 66.7% did

not use the LNME, leading to inappropriate medicine availability at different levels of care. Acquisition Process None received quantities matching their orders, resulting in frequent stockouts and overstocking. Distribution Process Only 22.2% had a formal medicine reception committee. 22.2% had reception reports signed by three people; the rest were signed by a single individual. 55.6% used stock cards, but only 11.1% kept them up to date. 66.7% maintained inventory records, while 33.3% did not. 33.3% submitted monthly activity reports; 66.7% did not. Utilisation Process 100% dispensed medicines based on prescriptions. The study revealed significant gaps in the supply chain for EGMs in Kisenso. The lack of adherence to the LNME, poor record-keeping, and insufficient qualified personnel contribute to stockouts and inefficient medicine management. These findings are consistent with other studies in similar contexts, highlighting the need for improved training, supervision, and resource allocation.

Conclusion: Despite the adoption of policies to improve access to EGMs, substantial challenges remain in the Kisenso Health Zone, in Kinshasa-DRC. The absence of updated stock records, unreliable delivery schedules, and lack of qualified staff undermine the effectiveness of the supply chain. Addressing these issues is critical to ensuring the availability and rational use of essential medicines.

Pharmabox: Sharing experience, perspectives and challenges

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Background: Pharmabox, a recently introduced device in Denmark, allows patients to collect their prescribed medications even during the pharmacy's closing hours.

Objective: This poster discusses the existing functionalities and the potential for improved efficiency in the future, by analyzing the weaknesses of current methods.

Method: The patient typically orders and pays for medicines using one of the three available methods. • Through an application called "Apoteket", the patient can order prescription medications from the pharmacy and pay via MobilePay. • Through a website called "apoteket-online.dk", where Payment is made via MobilePay. • Through telephone contact, an option available only to customers who have granted access to one of their bank accounts. • After the customer has placed their order and completed the payment, the pharmacy staff place the items including the prescribed medicines labeled with patient's name and dosage instructions, as well as any additional requested products, together with an invoice inside a paper bag, which is then placed in one of the lockers. Simultaneously, the computer

system connected to Pharmabox sends an SMS to the customer's phone containing the code required to open the designated locker. Challenges • The first challenge concerns the method of payment and its registration in the pharmacy's system. In some pharmacies, however, MobilePay payment is available to all customers including those ordering via telephone. • Another potential concern involves the internal temperature of the Pharmabox. Since the Pharmabox must be installed in a location that remains accessible even during the pharmacy's closing hours, maintaining room temperature (between 15oC and 25oC) can present challenges. • In Danish pharmacies counselling services such as Medicinsamtale, Compliancesamtale, and TPI1 are offered to patients free of charge. A reduction in patients' physical presence in the pharmacy can consequently diminish the likelihood of such consultations taking place.

Results: 2 Perspectives and strategies • Equipping the pharmacy system with online payment solutions, such as Mobilepay (currently used) can address concerns regarding registration of payment. • Incorporating a thermo-logger (following temperature mapping and finding the worst-case scenario). • To prevent a decrease in the number of advisory services: o A leaflet can be placed inside each package in the Pharmabox. o It is always possible to contact potential candidates via telephone, SMS, or email for services. o It is recommended that the community of pharmacists, in collaboration with regulatory bodies, develop a set of guidelines for the proper use of Pharmabox, particularly emphasizing standardized procedures for inviting patients to counselling sessions.

Conclusion: The Pharmabox can serve as a practical solution to enhance customers' access to medicines. However, the absence of a coherent and formally codified set of regulations for Pharmabox is keenly felt. 1. Medicinsamtale and Compliancesamtale are the free counselling services in Danish Pharmacies, promoting knowledge and compliance among medicine users. TPI (Tjek på Inhalation) is another counselling service about the correct technique for using inhalation medicines.

Identifying missing medication reimbursement for residents in assisted living facilities: A community pharmacy perspective

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Background: Access to medication reimbursement is essential to ensure that residents in assisted living facilities can follow their prescribed treatment. Residents in assisted living facilities are often vulnerable and rely on several healthcare providers, including the local municipality, general

practitioners, and community pharmacies. In daily practice, responsibility for managing reimbursement is divided across sectors, but the responsibility is often unclear. Community pharmacies have access to prescription and reimbursement information and are therefore well positioned to identify missing medication reimbursement. However, little is known about how community pharmacies can systematically contribute to identifying missing medication reimbursement for residents in assisted living facilities. The purpose of this project was to identify barriers in current practice and clarify the potential role of community pharmacies in supporting medication reimbursement for residents in assisted living facilities.

Method: This practice-based project used a mixed-methods design combining quantitative prescription review with qualitative interviews. The study was conducted in assisted living facilities within Esbjerg Municipality, Denmark. Data collection took place in November 2025 and included a systematic review of 657 prescriptions from several assisted living facilities, as well as semi-structured interviews with one local municipal coordinator and two local general practitioners. The prescription review was conducted by a pharmacy technician and a pharmacist, and prescriptions were assessed for reimbursement status. Quantitative data were organised and analysed using frequency counts, while qualitative data from interviews were analysed to identify key themes related to barriers in medication reimbursement management. All data were handled in an aggregated and anonymised form.

Results: The prescription review included 657 prescriptions, of which 463 were within the project's target group. Among these, 107 prescriptions had no reimbursement, indicating a potential gap in medication reimbursement for residents in assisted living facilities. Interviews with the municipal coordinator and general practitioners identified limited knowledge of reimbursement rules, lack of systematic procedures, and time constraints as key barriers to identifying and applying reimbursement. These findings suggest that missing medication reimbursement may lead to increased out-of-pocket costs for vulnerable residents and may in some cases result in delayed or discontinued treatment. The pharmacy data system provided clear visibility of reimbursement status, enabling identification of missing reimbursement and suggesting that community pharmacies could play an important role in improving access to medication reimbursement for vulnerable residents.

Conclusion: This project demonstrates that community pharmacies have the knowledge and system access needed to identify missing medication reimbursement for residents in assisted living facilities and can act as an important link between the local municipality and general practitioners. These findings highlight a gap in current reimbursement workflows and demonstrate that residents risk paying unnecessarily for medication unless these gaps are addressed. To implement this role in a systematic way, dedicated time and financial support are required. With appropriate resourcing, community pharmacies can play a

key role in improving access to medication reimbursement for residents in assisted living facilities. Future studies with larger datasets and longer study periods may further strengthen these findings and support the development of systematic pharmacy-based interventions.

Patient satisfaction with the collection of hospital-dispensed medicines outside outpatient clinics

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Background: In Denmark, certain categories of hospital-only medicines—particularly those used in oncology and other specialized therapeutic areas—are traditionally dispensed through hospital outpatient clinics rather than community pharmacies. To enhance patient convenience, the Capital Region of Denmark implemented automated medicine lockers at seven of eleven hospitals in 2020. Selected patients were able to retrieve their medication using a personal code transmitted via SMS. In 2024, a pilot initiative provided patients with the option to collect their hospital-dispensed medication at eight designated community pharmacies. Although the Hospital Pharmacy retained responsibility for medication packaging, collaboration with the community pharmacies enabled patients to obtain their medicines closer to their residence. Opening hours varied considerably across the distribution points: outpatient clinics (09:00–15:00), community pharmacies (typically 09:00–17:30), and medicine lockers (06:00–21:00 or 24-hour access).

Objective: The aim of the study was to evaluate patient satisfaction with alternative distribution channels for hospital-dispensed medicines and to identify factors contributing to patient hesitancy to ward using locations other than outpatient clinics.

Method: An electronic questionnaire was developed in SurveyXact and distributed in spring 2024 to 1,780 patients from the Department of Rheumatology at Glostrup Hospital in Capital Region. A total of 613 patients completed the questionnaire in full. Respondents who expressed any degree of dissatisfaction with a particular distribution method were invited to elaborate in an open-ended comment field.

Results: The findings indicate that patients are generally highly satisfied with the opportunity to collect their medication outside outpatient clinics. Nine out of ten respondents reported personally collecting their medicine regardless of the distribution point. At their most recent collection, 270 patients used a community pharmacy, 167 used a medicine locker, and 176 obtained their medicine from the outpatient clinic. A large proportion of patients reported high satisfaction with both medicine lockers (88.6%) and

community pharmacies (84.5%). Approximately 25% of those using a locker or community pharmacy, however, felt that collecting medication outside the outpatient clinic reduced their contact with healthcare professionals. Conversely, 80% of patients reported no difficulties during their most recent collection at a community pharmacy. When asked about their preferred distribution method for future collections, 60% expressed a preference for collecting their medication at their local community pharmacy. Analysis of the open-ended responses revealed two predominant themes: Desire for an expanded network of participating community pharmacies – to further reduce travel time compared with both medicine lockers and outpatient clinics. Emphasis on extended opening hours – with both community pharmacies and medicine lockers perceived as offering greater flexibility than outpatient clinics.

Conclusion: Overall, patients expressed a high level of satisfaction with the option to collect hospital-dispensed medicines through alternative distribution channels. Extended opening hours at both community pharmacies and medicine lockers were highlighted as significant advantages. Patients also emphasized the need to expand the number of participating community pharmacies to improve accessibility and reduce travel distances. Continued attention is required to ensure that patients and healthcare professionals maintain ongoing communication regarding disease progression.

Wegovy and professional counselling. How can pharmacy technicians support patients treated with Wegovy?

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Background: The use of Wegovy for weight management has increased substantially in recent years. Treatment requires correct injection technique, adherence to weekly dosing, appropriate handling of needles and pens, and an understanding of potential side effects and necessary lifestyle changes. In community pharmacies, patients treated with Wegovy frequently present with questions, uncertainty and medication-related problems. We examined 10 reports of misuse, adverse effects and unintended incidents indicate that gaps may exist between the information provided at treatment initiation and the patient's actual understanding and application of this information. This raises questions regarding the division of counselling responsibilities between general practice and community pharmacies and the role of pharmacy technicians in supporting patient safety during Wegovy treatment. The study aimed to investigate how the guidance provided to users of Wegovy from general practice in how to support patients in using the medication, the challenges they face in understanding and administering it, and how pharmacy counselling can help strengthen patient safety.

Method: A mixed-methods design was applied. Data was collected through questionnaire surveys among patients treated with Wegovy and healthcare professionals in general practice, including nurses and medical secretaries. Semi-structured interviews were conducted with pharmacy technicians from 13 community pharmacies across Denmark. A review of reported unintended incidents related to Wegovy use in pharmacy practice on different pharmacies was performed. A visit to a community pharmacy offering structured medication counselling as part of a medical weight management service. The collected data was analyzed descriptively to identify recurring themes related to patient counselling, medication use and safety.

Results: The questionnaire survey among 151 Wegovy users showed high adherence to prescribed dosing 94% and high level of satisfaction with pharmacy counseling 96%. Between 54%-82% reported received information on dosing, injection frequency and side effects. However, interviews with 25 pharmacy technicians and analysis of 10 unintended incidents revealed gaps in patients' practical knowledge. Common issues included incorrect injection frequency, failure to change needles, repeated use of the same injection site and misunderstanding of pen functionality. These issues resulted in misuse, unnecessary side effects and incorrect product complaints. Healthcare professionals in general practice described providing comprehensive counselling at treatment initiation and viewed themselves as the primary source of patient information. Expectations of the pharmacy's role varied and were often limited to dispensing and practical advice. Pharmacy technicians reported that sensitive aspects of weight management and concerns about discretion sometimes led patients to decline counselling, despite evident knowledge gaps.

Conclusion: The findings indicate that pharmacy technicians play an important and often underestimated role in ensuring safe and effective use of Wegovy. Although patients report high satisfaction, clinically relevant knowledge gaps persist and contribute to misuse and unintended incidents. More systematic and repeated counselling in community pharmacies, particularly at treatment initiation and during dose escalation, may reduce errors and improve treatment safety. Strengthened collaboration and clearer role definitions between general practice and community pharmacies are essential to ensure consistent and effective patient support throughout the treatment pathway.

Sterile compounding in the United States and Canada: A comparison between USP <797> and NAPRA 2015 model standards

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Background: In the United States (U.S), regulation of sterile compounding primarily falls under individual states but compliance with the United States Pharmacopeia (USP) Chapter <797> Pharmaceutical Compounding – Sterile Preparations is required by federal law. USP <797> revisions went into effect on November 1, 2023. In Canada, regulation of sterile compounding falls under individual provinces. The National Association of Pharmacy Regulatory Authorities (NAPRA) developed Model Standards for Pharmacy Compounding of Non-Hazardous Sterile Preparations in 2015 and recently published a draft Model Document for PRA use: Sterile Compounding Standards, which incorporates hazardous compounding. Compliance with NAPRA model standards is determined by individual provinces. Both USP <797> and the NAPRA Model Standards are considered minimum practice standards but neither USP nor NAPRA have regulatory authority.

Method: A comparison was made between USP <797> and NAPRA Model Standards focusing on non-hazardous sterile compounding. Areas of comparison included scope, facility requirements, personnel training and competency, components, compounding process, assigning beyond-use dates, labeling, documentation requirements, standard operating procedures, and quality assurance and quality control. Charts were created to compare the data.

Results: Many similarities were identified along with a few notable differences. USP <797> requires oversight by a designated person while NAPRA defines a sterile compounding manager. USP <797> defines three categories of compounding while NAPRA defines two levels of compounding. NAPRA also requires an overall facility risk assessment. Small differences were identified in all other areas.

Conclusion: Although USP and NAPRA do not hold regulatory authority, both are important practice standards when performing sterile compounding. Sterile compounders should ensure they are familiar with the applicable standard as well as state and provincial regulations.

PharmSpeak - Norwegian

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Background: Norwegian pharmacies face a growing shortage of pharmacists, leading to increased recruitment of foreign-educated professionals. While these pharmacists possess strong professional competence, many encounter language-related and cultural challenges that affect communication with patients and colleagues. Effective communication is critical for medication safety, patient trust, and quality of care.

Objective: The PharmSpeak -Norwegian project aims to strengthen Norwegian language and communication skills among foreign-educated pharmacists through profession-specific, practice-oriented language training embedded in authentic pharmacy scenarios.

Method: PharmSpeak - Norwegian is an interactive, web-based course developed through collaboration between language educators and practicing pharmacists. The course focuses on spoken and written Norwegian in real-life pharmacy situations, including patient counselling on medications, interpretation of prescriptions, and workplace communication. Teaching materials include professionally produced videos featuring pharmacists in simulated patient encounters, listening and writing exercises, and contextual introductions to Norwegian pharmacy practice and work culture. The course runs over one semester with live online classes, close teacher follow-up, and peer interaction. Exposure to multiple Norwegian dialects is intentionally included.

Results: The first course cohort launched in autumn 2025 and was fully booked immediately, with a significant waiting list, indicating high demand. Participants report increased confidence in patient communication and improved understanding of linguistic variation in Norwegian pharmacy practice. The course complements existing professional training by focusing specifically on language acquisition and communicative competence.

Conclusion: PharmSpeak - Norwegian represents an innovative and scalable model for profession-specific language training that supports integration, patient safety, and workforce sustainability in pharmacy practice. The project demonstrates how targeted language education can enhance quality of care and may be transferable to other healthcare professions and international contexts.

Mapping the patient journey after independent pharmacy closures: Implications for continuity of care

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Background: Independent community pharmacy closures have increased across the United States over the past decade, disproportionately affecting underserved communities and raising concerns about medication access and continuity of care. In Kentucky, numerous independent pharmacies have closed in recent years, leaving some communities without a local pharmacy. While prior research has documented the geographic distribution and predictors of pharmacy closures, little is known about how patients experience these transitions. Understanding the patient journey following pharmacy closure may help identify barriers to medication access and opportunities for healthcare systems to better support patients during these disruptions. The objective of this study was to describe patients' experiences following the closure of independent community pharmacies in Northern Kentucky using a patient journey mapping framework.

Method: This qualitative study used semi-structured interviews with seven adults aged ≥18 years receiving ambulatory care within a Northern Kentucky physician group who had chronic medication refills sent to an independent pharmacy that subsequently permanently closed. Eligible patients were identified through the electronic health record system. Purposive sampling was used to recruit participants representing different pharmacy closures. Interviews were audio-recorded and transcribed verbatim. Data were analyzed using rapid content analysis guided by patient journey stages.

Results: Seven participants were interviewed (6 female, 1 male) with ages ranging from 47 to 79 years. Rapid content analysis identified five key stages in the patient journey following pharmacy closure: 1) awareness of closure, 2) prescription transfer, 3) medication access, 4) adaptation to a new pharmacy, and 5) perceived impact on continuity of care. Patients reported learning about pharmacy closures through a variety of channels, including social media, posted notices, mailed letters, and local news, with limited direct communication from the closing pharmacy. Prescription transfers were often automatic; however, some participants described administrative challenges, the need for new prescriptions, or uncertainty regarding where prescriptions had been transferred. Several participants reported logistical changes in medication access, including increased travel distance to the new pharmacy or reliance on family members for transportation. Experiences with new pharmacies varied. While some patients reported smooth transitions and satisfactory services, others perceived reduced

personalization of care compared with their previous independent pharmacy. Many participants described strong prior relationships with community pharmacists and noted that the closure represented a loss of trusted healthcare support.

Conclusion: Independent pharmacy closures represent a disruptive transition for many patients and can affect multiple stages of the medication-use process. While some patients were able to adapt without major interruptions in care, others experienced challenges related to communication, prescription transfers, and changes in access to pharmacy services. The findings highlight the important role independent pharmacies play in providing personalized care and trusted relationships within communities. Improved communication strategies, coordinated prescription transfer processes, and support from healthcare providers may help mitigate disruptions and support continuity of care for patients affected by pharmacy closures.

Mandatory quality-related event reporting in community pharmacies in Canada: A province-wide review over seven yearsCPS-060 - Mandatory Quality-Related Event Reporting in Community Pharmacies in Canada: A Province-Wide Review Over Seven Years

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Background: There has been limited research that quantitatively and qualitatively analyzes quality related events (QREs) in pharmacies. Eight Canadian provinces have moved towards mandatory QRE reporting in pharmacies to the National Incident Data Repository (NIDR). Saskatchewan, a Canadian province, has implemented a standardized continuous quality improvement program with mandatory QRE reporting since December 1, 2017. The objective of this project was to quantify and characterize medication-related QREs that were anonymously reported to the NIDR by Saskatchewan pharmacies.

Method: A retrospective descriptive analysis was conducted on medication-related QREs reported by Saskatchewan pharmacies between December 1, 2017 and June 30, 2024. Descriptive analysis was performed on all medication-related QREs regarding type of incident, discoverer, medication system stages, medications, and outcome. A qualitative multi-incident analysis was performed on harm incidents.

Results: A total of 38,812 medication-related QREs were anonymously reported by 452 pharmacies in Saskatchewan to the NIDR. Overall, 47.51% (18,440) reported medication-related QREs did not reach the patient and 3.89% (1,510) resulted in harm. Reports of incorrect dose/frequency (22.5%; 8,734), incorrect drug (18.07%; 7,012), and incorrect quantity (15.12%; 5,870) were most common. Pharmacists discovered majority of medication-related QREs (56.47%; 21,918). Prescription order entry was the most frequently reported medication system stage for error occurrence, followed by prescription preparation and dispensing. The top 3 medications that were reported as associated with harm were methadone, levothyroxine, and quetiapine. The qualitative multi-incident analysis revealed 3 major themes that were related to harm QREs: high risk processes in pharmacy (including opioid agonist therapy and compounding); communication gaps in interprofessional and intra-professional collaboration; and unintentional medication discrepancies (including therapeutic duplication/omission).

Conclusion: By quantifying and characterizing medication-related QREs that were anonymously reported by community pharmacies in a Canadian province, new high-alert medications and high-risk processes in pharmacy practice were identified. Medication system stage-specific and medication-focused interventions are necessary to mitigate harm and improve patient safety.

Impact of benign prostatic hyperplasia on the quality of life of patients and family members: Evidence from community pharmacy

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Background: Benign Prostatic Hyperplasia (BPH) is one of the most prevalent urological conditions in men and is frequently associated with lower urinary tract symptoms that can significantly compromise quality of life. The prevalence of the condition increases with age, affecting approximately 8% of men between 31 and 40 years of age, 40–50% between 51 and 60 years, and more than 80% of men over the age of 80. In addition to its impact on patients, urinary symptoms associated with BPH may also affect the physical, psychological and relational wellbeing of family members living with the condition. Due to their accessibility and proximity to the population, community pharmacies are well positioned to promote health literacy and contribute to the early identification of suggestive symptoms of this condition.

Objective: To assess the impact of Benign Prostatic Hyperplasia on the quality of life of male patients and to

analyse the impact of the disease on family members living with patients diagnosed with BPH.

Method: The study was conducted during November 2024 and involved two main interventions in community pharmacy. The first intervention consisted of promoting health literacy regarding BPH, including information about urinary symptoms, disease progression and its impact on quality of life. The second intervention consisted of administering the IPSS questionnaire (International Prostate Symptom Score) to assess the presence and severity of urinary symptoms associated with BPH. Data were collected using a digital form (Formsapp®) developed for this purpose and subsequently analysed using Microsoft Excel®. The initiative involved 100 community pharmacies.

Results: The initiative involved 4,084 participants, of whom 54% had a diagnosis of BPH, and 51% were aged between 67 and 77 years. Assessment using the IPSS questionnaire identified the main urinary symptoms reported by patients during more than half of the month. Among these, 32% reported frequent nocturia, 28% reported weak urinary flow, 25% reported a sensation of incomplete bladder emptying, 25% reported the need to strain to initiate urination, 23% reported urinary urgency, and 22% reported intermittent urinary flow. Regarding the overall severity of symptoms, 39% of patients classified them as mild, 42% as moderate, and 19% as severe, indicating that 61% of participants presented moderate to severe symptoms. Concerning the impact of the disease on family members, of whom 53% were spouses, a relevant impact on quality of life was observed. 35% reported significant interference with sleep quality, 34% indicated that frequent bathroom visits were considerably bothersome, 25% reported an impact on sexual life, and 38% reported a significant impact on mental health.

Conclusion: Benign Prostatic Hyperplasia has a high prevalence and a significant impact on patients' quality of life, with more than half presenting moderate to severe symptoms. The condition also affects the physical, psychological and relational wellbeing of family members living with patients. These results highlight the importance of promoting health literacy and early identification of symptoms in community pharmacy, contributing to improved disease management and quality of life.

Impact of point-of-care testing for Group A Streptococcus on sore throat screening in community pharmacy: Contribution to healthcare access and rational antibiotic use

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Background: Sore throat is one of the most common reasons for seeking advice in community pharmacies. However, approximately 80% of oropharyngeal infections are viral, making antibiotic therapy unnecessary in most cases. The use of point-of-care (POC) tests for the detection of Group A Streptococcus can support clinical decision-making, optimise pharmaceutical counselling and contribute to the rational use of antibiotics. Due to their accessibility and proximity to the population, community pharmacies are well positioned to provide initial screening for oropharyngeal infections, facilitating access to healthcare and promoting appropriate symptom management.

Objective: To evaluate the impact of implementing point-of-care testing for the detection of Group A Streptococcus in community pharmacies on sore throat screening, pharmaceutical counselling and access to healthcare services.

Method: The study was conducted between January and December 2025 and involved the implementation of a sore throat screening service in community pharmacies. Patients presenting with signs or symptoms suggestive of bacterial throat infection were initially assessed using a structured clinical questionnaire. After informed consent, a throat swab was collected to perform a point-of-care test for the detection of Group A Streptococcus. Patients with positive test results, as well as those with negative results but presenting risk factors or belonging to risk groups, were referred for medical evaluation. All intervention-related data were recorded by pharmacy teams through a dedicated digital platform.

Results: The initiative involved 63 community pharmacies, where 1769 sore throat screening services were performed. Among participants, 66% were female and 75% were under 45 years of age. Test results were negative in 79% of cases (approximately 1398 patients), while 21% presented a positive result. In the majority of cases (71% of participants), the intervention resulted only in pharmaceutical counselling for symptomatic relief, without the need for medical referral. The service also demonstrated a high level of patient satisfaction, with 83% reporting being "very satisfied" and 17% "satisfied" with the service provided. Importantly, the implementation of this screening service avoided potential emergency department visits in approximately 79% of

patients, while supporting appropriate antibiotic use and improving access to timely healthcare advice.

Conclusion: The implementation of point-of-care testing in community pharmacies proved to be an effective tool for the screening and management of sore throat. This service improved pharmaceutical counselling, enhanced access to healthcare and promoted the rational use of antibiotics. These findings reinforce the important role of community pharmacies in the early management of minor infections and in combating antimicrobial resistance.

Pharmaceutical intervention in the detection of urinary tract infections in community pharmacy: The role of point-of-care testing in access to healthcare

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Background: Urinary tract infections (UTIs) represent the second most common bacterial infection in primary care, surpassed only by respiratory tract infections, and are considered a significant public health concern. Early diagnosis and treatment are essential to prevent complications and improve patient outcomes. In primary care, there remains an unmet clinical need for rapid and accurate diagnostic tools to support clinical decision-making. The implementation of point-of-care (POC) testing in community pharmacies represents an opportunity to improve early detection of urinary tract infections, enhance pharmaceutical counselling and facilitate timely access to healthcare services.

Objective: To evaluate the feasibility and effectiveness of implementing a urinary tract infection detection service in community pharmacies, as well as the impact of pharmaceutical intervention following point-of-care testing.

Method: The study was conducted between January and December 2024 and involved the implementation of a urinary tract infection detection service in community pharmacies. Patients presenting with signs or symptoms suggestive of urinary tract infection were initially assessed through a structured clinical questionnaire. After informed consent, urine dipstick tests were performed to detect the presence of nitrites, leukocytes and blood. Patients with potentially positive results, as well as those with negative results but presenting warning signs or belonging to risk groups, were referred for medical evaluation. All intervention-related data were recorded by pharmacy teams through a dedicated digital platform.

Results: The initiative involved 63 community pharmacies, where 1809 urinary tract infection detection services were performed. Among participants, 88% were female and 60% were aged between 41 and 60 years. In 64% of cases, medical evaluation was recommended, including 38% due to test results suggestive of urinary tract infection, 19% due to the presence of warning signs, and 7% due to belonging to risk groups. Pharmacological counselling for symptom relief was provided to 56% of participants, while non-pharmacological counselling was delivered in 99% of cases. The service also demonstrated a high level of patient satisfaction, with 85% of participants reporting being “very satisfied” and 15% reporting being “satisfied” with the service. Importantly, the implementation of this service avoided potential emergency department visits in approximately 36% of patients, while contributing to rational medicine use and improved management of urinary tract infection symptoms.

Conclusion: The implementation of urinary tract infection detection services in community pharmacies proved to be feasible, effective and well accepted by patients. The use of point-of-care testing supports clinical decision-making, improves pharmaceutical counselling and facilitates early detection. These findings reinforce the important role of community pharmacies in the early management of urinary tract infections, improving access to healthcare and contributing to better public health outcomes.

Real-world safety and effectiveness of GLP-1 receptor agonists in community pharmacy

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Background: Metabolic syndrome represents one of the main global public health challenges and is closely associated with obesity, dyslipidaemia, hypertension and insulin resistance, significantly increasing cardiovascular risk and the prevalence of type 2 diabetes mellitus (T2DM). Glucagon-like peptide-1 receptor agonists (GLP-1 RAs) have become a cornerstone in the management of both obesity and T2DM due to their favourable effects on glycaemic control and weight reduction.

However, their rapid expansion in clinical practice has raised concerns regarding inappropriate use, off-label prescribing, incorrect dose escalation, administration errors and insufficient adherence to lifestyle recommendations, all of which may compromise treatment effectiveness and safety. A pilot study conducted in community pharmacies identified frequent gastrointestinal adverse drug reactions, relevant medication-use problems and a high level of patient acceptance of pharmacist-led interventions. These findings highlighted the need for a broader evaluation of GLP-1 RA use in real-world ambulatory settings and supported the design of a large-scale multicentre study.

Objective: To evaluate the safety profile and effectiveness of GLP-1 receptor agonists in patients with obesity and T2DM in real-world practice, and to assess the impact of a standardized pharmacist-led intervention during dispensing, based on the results obtained from a previous pilot study.

Method: A multicentre, cross-sectional, observational study will be conducted in Spanish community pharmacies belonging to the Pharmaceutical Care Spain Foundation network and 12 collaborating professional associations of pharmacy representing 39,81% (19.556.054 inhabitants) of Spain's total population (49.128.297 inhabitants). The study has already been approved by a Research Ethics Committee. A total of 900 patients will be included and distributed into two cohorts: 450 patients treated with GLP-1 RAs for T2DM and 450 patients treated for obesity. Each participating pharmacy will recruit three patients per cohort. The study protocol and data collection tools were refined following the pilot experience. Trained community pharmacists will conduct structured interviews using an online questionnaire collecting demographic data, anthropometric parameters, comorbidities, treatment characteristics, dose modifications, duration of therapy and adverse drug reactions. Bivariate analyses will be performed to assess associations between adverse reactions, type of GLP-1 RA and patient-related variables. Odds ratios with 95% confidence intervals will be calculated, adjusted for age, sex and number of concomitant treatments. Suspected adverse drug reactions will be recorded and reported through the national pharmacovigilance system.

Results: The study is expected to provide robust real-world data on the incidence and nature of adverse drug reactions, patterns of use and effectiveness of GLP-1 receptor agonists in both obesity and T2DM. Comparative analyses between cohorts will allow identification of factors associated with improved outcomes and increased risk of adverse events.

Conclusion: Building on the findings of a prior pilot study, this multicentre investigation aims to generate high-quality real-world evidence on the safety and effectiveness of GLP-1 receptor agonists. The results are expected to support the development of standardized pharmaceutical care protocols, reinforcing the role of community pharmacists in promoting the rational, safe and effective use of GLP-1 therapies.

Proximity dispensing of hospital-only medicines in Portugal: Training of community pharmacists

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Background: In Portugal, proximity-based dispensing of hospital medicines has been implemented to address patient access challenges, including geographical, socioeconomic, and mobility barriers, a need reinforced by the COVID-19 pandemic. In 2023, Decree-Law No. 138/2023, Ordinance No. 106/2024/1 and No. 104/2024/1, established the legal, regulatory and remuneration framework governing this model and the provision of the pharmaceutical service in community pharmacies, including the requirement for mandatory complementary training for the pharmacists involved. The FIT® training programme has become a recognised standard within the pharmaceutical sector, supporting professional development through in-person and online formats. Accordingly, the e-Learning course “Proximity-Based Dispensing of Medicines and Health Products”, launched in January 2025 and delivered by Cientis Escola®, aims to equip pharmacists with the competencies required for the safe and effective implementation of this service in community pharmacies, supporting patient-centred care.

Method: The e-Learning course complied with the requirements defined by the Portuguese Pharmaceutical Society. It was launched on Cientis Escola® Percepium® platform and was followed by a satisfaction survey. Data collected between January 2025 and February 2026 were obtained via the Humantrain® platform, a database used by Cientis Escola®, and analysed using Microsoft Excel® and PowerBI®. The course was included in FIT® Programme and made available free of charge to pharmacies affiliated with the programme, while remaining accessible to non-FIT® pharmacies upon payment.

Results: The course was developed exclusively for pharmacists and comprised 10 hours of e-Learning training. Launched in January 2025, it was structured into 3 modules covering distinct areas. The 1st module addressed legislation and good practice applicable to the proximity dispensing framework. The 2nd module focused on medicines subject to exclusive hospital dispensing and the clinical relevance of several disease areas, including oncology, inflammatory and autoimmune diseases, neurological and neurodegenerative disorders, immune system diseases, organ transplantation, growth-related and hormonal disorders, as well as selected rare diseases. The 3rd module included hospital pharmaceutical regulations and clinical pharmacy

consultation, alongside content related to dispensing and counselling in the community pharmacy setting, information management, and communication. By February 2026, data indicated that 3,817 community pharmacists from 1,481 pharmacies were enrolled in the course. Of these, 2,291 community pharmacists from 1,136 pharmacies completed the training pathway, fulfilling the specific complementary training requirements for participation and intervention within the proximity dispensing framework. The course was accredited by the Portuguese Pharmaceutical Society with continuing professional development credits. Based on 2,026 responses to the satisfaction questionnaire completed at the end of the e-Learning course, an overall satisfaction rate of 89.54% and a recommendation rate of 93.98% were recorded.

Conclusion: The requirement for complementary training for community pharmacists within the proximity dispensing framework is recognised by regulation at national level. High engagement in the training indicates strong professional interest and commitment, supporting continuous professional development in delivering high quality, patient-centred care aligned with healthcare system needs. These findings support the role of professional development in enabling enhanced pharmacy services aligned with patient needs and evolving healthcare system demands.

Sem Preconceito (“Without Prejudice”): Empathy first – changing the way we talk about chronic disease in the pharmacy

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Background: Clear and empathetic communication enhances the understanding of health information and facilitates informed decision-making. The expansion of hospital-only medicines dispensing through community pharmacies in Portugal reinforces the need to strengthen health literacy among professionals and the community. Professional organizations and patient associations (PA), representing patients and their carers, can play an important role in promoting health literacy. The Sem Preconceito (“Without Prejudice”) Project was launched in September 2025 as a joint effort of Cientis Escola® of Portuguese National Association of Pharmacies (ANF) and Plataforma Saúde em Diálogo, a non-profit organization whose mission is to advocate for citizens’ rights, promote their involvement in health policies and contribute to health literacy. The project aims to empower

community pharmacy teams nationwide with training on different chronic conditions, adopting a humanising approach to care to enhance health literacy among professionals and general public, and to promote empathetic, stigma-free and patient-centred interactions.

Method: The initiative comprises 2 complementary components. Monthly training webinars (except in December), delivered via Zoom® and followed by satisfaction surveys, bring together medical specialists and PA, integrating clinical expertise with patient perspective and the contribution of PA through dedicated services and activities. Data were collected via Humantrain® platform, a database used by Cientis Escola®, and analysed using Microsoft Excel®. Podcasts/videocasts, available on Spotify® and aimed at community, feature conversations between a regular moderator and people living with the conditions, focusing on their lived experiences and the multidimensional impact of disease, highlighting the support offered by PA. In addition to the dissemination channels, other communication channels were used to enhance the visibility of the project, namely the Cientis Escola® and Plataforma Saúde em Diálogo websites, the intranet of the National Association of Pharmacies, and the social media platforms of the project promoters and partner organisations. Occasional publications were featured in 2 leading journals within the Portuguese pharmaceutical sector. The project is supported by 3 pharmaceutical partners.

Results: Between 25 September and 6 March, 6 webinars and 5 podcast/videocast episodes were delivered, involving 6 medical specialists and 6 PA. A total of 1,907 participants and 1,158 community pharmacies were registered for the webinars. From 548 responses, an overall satisfaction rate of 94.4% was reported. Podcast/videocast episodes reached 1,907 plays on Spotify®. The 1st season concludes in May and covers 8 chronic conditions: chronic spontaneous urticaria, inflammatory bowel disease, breast cancer, psoriasis, multiple sclerosis, migraine, chronic kidney disease and juvenile idiopathic arthritis. From the start of the project until 6 March, a total of 73 communications were delivered, reaching 24,704 unique individuals. Over the same period, project-related publications generated 28,009 social media views and unique opens through email marketing.

Conclusion: Preliminary results suggest strong engagement, high satisfaction levels and a positive contribution to promoting health literacy and patient-centred interactions, supported by highly positive qualitative feedback from healthcare professionals and patient associations.

Assessment of adverse drug reaction reporting by community pharmacists in Portugal

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Background: Pharmacovigilance is a cornerstone of public health, and the reporting of adverse drug reactions (ADRs) is both a legal and professional obligation for community pharmacists. Despite their strategic role within the National Pharmacovigilance System (SNF), underreporting remains a persistent issue in Portugal. This project aimed to characterise the ADR reporting process in community pharmacies affiliated with the National Association of Pharmacies, assess compliance with legal requirements and good pharmacovigilance practices, identify barriers and facilitators to reporting, and formulate recommendations to improve the reporting process.

Method: Between August and December 2025, an internal audit was developed based on international and national good pharmacovigilance practice standards. Evidence was collected through a structured and anonymous electronic questionnaire administered to community pharmacists from 14 November to 2 December 2025. Results were analysed using quantitative compliance assessment and risk analysis associated with key audited criteria. The analysis of real ADR reports submitted to INFARMED (2019–2024) was not possible at the time of reporting.

Results: A total of 348 valid responses were analysed. Among the evaluated dimensions, key barriers were identified regarding conceptual and institutional knowledge of pharmacovigilance, the formal reporting process, the existence of internal procedures and audits, and systematic underreporting of ADRs—including mild, known, delayed reactions and those associated with new medicines or vaccines. The most frequently reported barriers included lack of time, perceived bureaucratic burden, and doubts about the utility of reporting. These weaknesses were consistent across age groups, experience levels, professional roles, and geographic regions.

Conclusion: The findings underscore substantial opportunities to enhance the integration of pharmacovigilance within community pharmacy practice, highlighting the need for a structured, system-wide approach. The implementation of targeted training initiatives, the

development of standardized operating procedures, and the promotion of a robust safety culture are strongly recommended. Strengthening these measures is crucial to optimizing the role of community pharmacies in medicine safety surveillance and in safeguarding public health.

Bringing screening closer to communities: expanding access to HIV, Hepatitis C, and Hepatitis B screening through community pharmacies in Portugal

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Background: Early detection of blood-borne viruses (BBVs), including HIV, hepatitis C (HCV), and hepatitis B (HBV), remains a major public health challenge with significant morbidity and mortality. Despite their accessibility and high level of public trust, community pharmacies remain underutilized as entry points for BBV screening. This project, funded by the FOCUS Program from Gilead Sciences, and implemented through a partnership between Plataforma Saúde em Diálogo and the Portuguese National Association of Pharmacies, aims to routine opportunistic screening in community pharmacy settings. By leveraging the frequent interactions between pharmacies and the community, the program seeks to reduce late diagnoses and facilitate timely linkage to care.

Method: This one-year project, starting in April 2026, is being implemented in approximately 40 community pharmacies across four municipalities in the Lisbon Metropolitan Area, where BBV diagnosis rates exceed the national average. The initiative provides 7,000 free point-of-care tests (3,000 HIV, 2,500 HCV, and 1,500 HBV) provided to trained pharmacists to adults. A key innovation is the integration of a dedicated Patient Navigator (a health professional provided by community-based organizations) who coordinates directly with Local Health Units within the Portuguese National Health Service (NHS) through a fast-track referral pathway created specifically for this project. This system aims to ensure that individuals with reactive screening results in pharmacies complete confirmatory testing and attend a specialist medical appointment promptly.

Results: Operational results from the initial months of implementation will be presented at the Congress. Primary indicators include the number of tests performed by virus type, reactivity rates, and the effectiveness of the linkage-to-care process, ensuring that individuals with reactive screening results are successfully referred into the NHS for clinical follow-up. Demographic characteristics of the tested population and satisfaction levels with the service will also be described.

Conclusion: This program highlights the potential of community pharmacies as accessible, proximity-based screening centers. By integrating patient navigation and direct coordination with the NHS, the initiative aims not only to increase early diagnosis but also to contribute to the reduction of BBV-related stigma. The findings may support the scalability of pharmacy-based screening models and contribute to progress toward the WHO 2030 targets for viral hepatitis elimination and HIV control in high-burden urban settings, while strengthening the role of community pharmacies as public health providers.

Community pharmacies as a sentinel network: partnership with the Oeste Local Health Unit in the epidemiological surveillance of respiratory viruses during the 2025-2026 Season

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Background: Seasonal respiratory infections pose an increasing challenge due to the high morbidity and mortality, and pressure exerted on healthcare services. Traditional surveillance systems present several limitations. Community pharmacies (CPs), given their proximity, accessibility, and frequent contact with the population, represent potential strategic sentinel units. The Local Health Unit from the Oeste region of Portugal (LHU) and the National Association of Pharmacies developed an integrated surveillance model that incorporates CPs as a structured real-time data source, strengthening Public Health response capacity. We aim to describe the implementation of the collaborative epidemiological surveillance system with CPs, and

preliminary epidemiological results of a model for respiratory viruses, with CPs functioning as sentinel sites.

Method: A sampling-based electronic questionnaire integrated into pharmacy software was applied. Demographic data and symptoms indicative of influenza-like illness (ILI) and acute respiratory infection (ARI) were collected. In suspected ILI cases, a rapid diagnostic test was offered and the result recorded. When dispensing self-tests, phone numbers were collected to enable result reporting via telephone message to the research team. All information was made available in real time to LHU for analysis of surveillance indicators and to support the implementation of the local seasonal healthcare response plan. Correlation was estimated between weekly proportions of ILI and ARI cases in community pharmacies and primary care, as well as between positive laboratory tests in pharmacies and those reported by the national surveillance system. All procedures complied with the General Data Protection Regulation, and the study was submitted to a competent ethics committee.

Results: More than 70% of eligible CPs joined the sentinel network, ensuring at least one participating pharmacy per municipality in the LHU region. As of 8 March 2026, a total of 2,017 questionnaires had been completed, and 729 users reported symptoms compatible with ILI. Cough was the most frequently reported respiratory symptom (50.0%), while general malaise was the most common systemic symptom (31.6%). Epidemiological outcome indicators showed a strong correlation of pharmacy data with traditional surveillance systems: ILI ($r = 0.86$), ARI ($r = 0.82$), ILI/ARI positivity ($r = 0.89$), and Influenza positivity ($r = 0.91$). The system enabled timely identification of epidemic patterns and supported targeted interventions in CPs, including counselling, vaccination promotion, reinforcement of respiratory etiquette, and referral of severe cases. Surveillance indicators were integrated into the LHU Response Plan.

Conclusion: Preliminary results demonstrate that CPs can play a relevant and complementary role in respiratory virus surveillance, providing community-level representative data with epidemiological performance aligned with classical systems. The model shows strong potential for scalability as an innovative and sustainable Public Health solution.

From billing to clinical value: Harmonising service recording in community pharmacy

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Background: The recording and billing of services are central to demonstrating the activity of community pharmacies and supporting the transition towards more structured models of clinical data and pharmaceutical intervention recording. These records rely on coding systems integrated into pharmacy information systems, enabling the monitoring of service activity. However, the coexistence of obsolete, redundant or outdated codes, as well as the absence of codes for services currently provided, compromises the quality, comparability and centralisation of information. We aim to describe a structured process for reviewing and harmonising service codes in community pharmacy, enabling the generation of more reliable data reflecting real-world practice.

Method: An analysis of the existing service code list within the SIFARMA® information system was conducted. The process included: (1) identification of obsolete codes; (2) detection of redundancies and inconsistencies in nomenclature; (3) identification of gaps regarding services currently provided; and (4) creation and harmonisation of codes and designations using uniform criteria aligned with professional practice. In parallel, a communication plan was developed to encourage pharmacies to systematically record services using the active codes.

Results: A total of 220 service codes were reviewed: 92 obsolete, redundant or rarely used codes were inactivated and 8 new codes were created to represent services previously not included. This process reduced the complexity of the list, standardised nomenclature and improved recording consistency, facilitating routine use and enhancing the quality and comparability of the information generated.

Conclusion: Harmonising service recording codes represents an important step towards moving beyond a billing-centred model to a more structured system for documenting clinical activity and pharmaceutical interventions. This initiative supports more reliable monitoring of community pharmacy practice and provides a stronger basis for evaluating its clinical, organisational and public health impact.

Advancing pharmaceutical practice through community pharmacy: The role of the pharmacy regulator in supporting Ireland's national common conditions service

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Background: Health systems around the world are facing growing challenges due to increased demand for primary care and workforce shortages. Expanding the role of pharmacy offers significant opportunities to increase patient access to timely care, release capacity in other areas of the health system, and enhance equity; however, this expansion requires a robust regulatory framework to maintain patient safety and public trust. In Ireland, the introduction of the new Common Conditions Service (CCS), which launched in January 2026, represents a significant development in pharmaceutical practice, enabling community pharmacists to advise, treat and prescribe for specified common conditions. The pharmacy regulator has worked collaboratively with stakeholders through an Implementation Oversight Group, comprising the Department of Health, national health service, regulatory and representative bodies, practising pharmacists and patient representatives, to create a regulatory framework focused on patient safety, while supporting service expansion within community pharmacy.

Objective: This abstract outlines the regulatory approach adopted to support the safe introduction of the CCS. It highlights the impact of multidisciplinary collaboration in translating policy into practice by establishing the necessary legislative, clinical, regulatory, educational, and operational safeguards required to protect patients and support high-quality pharmaceutical practice.

Method: The CCS was developed based on recommendations from the national Expert Taskforce to Support the Expansion of the Role of Pharmacy. A robust regulatory framework was established, including legislative amendments, mandatory training requirements, guidelines, and nationally approved clinical protocols. The pharmacy regulator took a leading role in education, training, and regulatory matters. The service includes eight conditions: allergic rhinitis, cold sores, conjunctivitis, impetigo, oral thrush, shingles, uncomplicated urinary tract infection, and vulvovaginal thrush. While pharmacists already offer advice, supply over-the-counter treatments, and refer patients for these conditions, this service expands their role by authorising them to prescribe prescription-only medicines, when appropriate, in accordance with clinical protocols. Participation requires pharmacists to complete mandatory training specified by the pharmacy regulator, ensuring the delivery of safe, person-centred care.

Results: This multidisciplinary approach has facilitated alignment between legislation, training, guidance to advance

pharmaceutical practice in community pharmacy. Pharmacists provide structured consultations incorporating clinical assessment, differential diagnosis within protocol criteria, prescribing where appropriate, patient counselling and safety netting. Defined referral pathways safeguard patients with symptoms beyond protocol scope. Over 94% of community pharmacies have signed up to deliver the service. More than 2,500 pharmacists have completed the mandatory training. This reflects the commitment in community pharmacy to increasing patient access to timely care and alleviating pressure on doctors and hospitals. Protocol-based care and regulatory oversight help maintain high standards of patient safety.

Conclusion: The CCS demonstrates how a multidisciplinary approach can advance pharmaceutical practice, aligning pharmacists' clinical expertise with public health needs, without compromising safety. Ongoing evaluation and regulatory oversight will be essential as the service evolves to ensure that it operates in accordance with regulatory standards and best practices. The CCS provides a practical model for strengthening pharmaceutical practice in community pharmacy and may offer valuable insights for international health systems aiming to enhance pharmacists' roles within integrated primary care.

Implementing a pharmacist-at-intake (P1st) and technician led dispensing (TLD) workflow to enhance clinical capacity, efficiency, and patient care in community pharmacy

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Background: Traditional community pharmacy workflows often assign pharmacists to technical tasks such as package verification, adjudication, dispensing, and compounding, leaving limited time for direct patient care. Resulting in pharmacists spending as few as four minutes/hour practising within their clinical scope, while technicians likewise lose opportunities to work to their full scope. This misalignment contributes to inefficiency, increased risk of error, team frustration, and missed opportunities for patient-centred care. By contrast, ISO and Six Sigma have established clear roles and enforced standards in hospital pharmacy practice, measurably improving team performance, efficiency and collaboration globally for nearly three decades.

Method: A descriptive practice approach was used to compare traditional workflow roles with the P1st and TLD workflows adapted from successful hospital practice. Roles and responsibilities across assistants, pharmacy technicians (RPhT), and pharmacists (RPh) were mapped to determine alignment with scope of practice. Process steps from prescription drop-off to verification were analysed.

Results: A multi-year workflow analysis of P1st, including TLD in community pharmacies since 2012, along with cases examples, and investigator access to proprietary industry time and motion data, indicated that the P1st/TLD workflow increases pharmacists' clinical time up to 15-fold, from 4 to 60 minutes/hour. Teams reported greater efficiency, reduced burnout, and enhanced job satisfaction when each member worked to full scope. (Danahy, Canadian Health Network case study 2024).

<https://docs.google.com/document/d/1jnQtSZabTUtNJvyej1q1WtIPFX09pmR/edit> In So et al, 2021, P1st improves patient outcomes in hypertension and diabetes care <https://pmc.ncbi.nlm.nih.gov/articles/PMC8581804/>. Marra et al (2014 PhInDMORE study) identified how pharmacists positioned at intake catch and document untreated conditions that orthodox workflow and typical time-constrained appointment based models cannot. It reported patients sent immediately to hospital emergency wards by seated pharmacists, and estimated reduced patient visits to emergency wards and referrals to physicians. <https://cfpnet.ca/cfp-commits-35000-to-ubc-practice-research-project/> System-level modelling suggests that widespread adoption of P1st could generate up to 62.7 million additional hours of pharmacist-delivered clinical care annually, demonstrating potential for significant impact on Canada's 23,000 primary care provider shortfall (40 million clinician-hours), Government of Canada workforce report Jan 2025. <https://www.canada.ca/en/health-canada/services/health-care-system/health-human-resources/workforce-education-training-distribution-study.html>

Conclusion: The Pharmacist-at-Intake workflow is a practical, scalable approach that radically expands pharmacists' clinical capacity, improves patient outcomes and strengthens the financial viability of any community pharmacy based on 30 years of hospital practice and adaptation in community for over a decade. TLD improves workflow and creates more clinical time for pharmacists. Where registered technicians are deployed, TLD further improves workflow, reduces labour cost per fill and increases pharmacist time and capacity for clinical practice and related revenue. Together, P1st and TLD form one integrated workflow with clearly separated clinical and dispensing roles, further enhancing team morale, fully realizing professional scope, and significantly expanding primary care system capacity.

Community pharmacy-based hypertension screening in Rwanda

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Background: Hypertension is a major modifiable risk factor for cardiovascular diseases and contributes substantially to

global morbidity and mortality. In many low- and middle-income countries, including Rwanda, a significant proportion of individuals with hypertension remain undiagnosed due to limited access to routine screening services. Early identification of elevated blood pressure is crucial to prevent complications such as stroke, heart failure, and kidney disease. Community pharmacies, being widely accessible healthcare points, offer an opportunity for pharmacists to engage in preventive health interventions, including hypertension screening and referral. Despite this potential, the role of community pharmacists in hypertension detection in Rwanda has not been systematically evaluated. This study aimed to assess the effectiveness of community pharmacy-based screening in identifying individuals with elevated blood pressure and facilitating referral to healthcare facilities.

Method: A cross-sectional study was conducted in selected community pharmacies across Rwanda. Adult clients aged 18 years and above visiting the pharmacies for medications or advice were invited to participate voluntarily in blood pressure screening. Trained pharmacists measured blood pressure using validated automated devices following standard procedures. Demographic data, including age and sex, and medical history related to hypertension were collected through a structured questionnaire. Participants with systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg were classified as having elevated blood pressure and were advised to seek further evaluation at nearby healthcare facilities. Descriptive statistics were employed to summarise the distribution of blood pressure readings, prevalence of previously undiagnosed hypertension, and referral outcomes.

Results: A total of 250 participants were screened, of whom 138 (55.2%) were female and 112 (44.8%) male, with a mean age of 42.6 years. Elevated blood pressure was identified in 72 participants (28.8%), of which 30 individuals (41.7%) were previously unaware of their hypertensive status. The majority of participants with elevated readings (95%) accepted referral to a healthcare facility for further assessment. Analysis indicated that pharmacy-based screening effectively identified undiagnosed cases and demonstrated high participant engagement. These findings highlight the feasibility of integrating hypertension screening into routine community pharmacy practice and underscore the important role pharmacists can play in primary healthcare delivery.

Conclusion: Community pharmacies represent a valuable platform for early detection of hypertension and promotion of preventive healthcare in Rwanda. Pharmacist-led screening initiatives can facilitate timely identification and referral of individuals with elevated blood pressure, thereby contributing to improved management of non-communicable diseases. Expanding such services within community pharmacies may strengthen primary healthcare systems, enhance population health outcomes, and support national strategies for non-communicable disease prevention and control.

From observation to qualified practice: Using flow diagrams to support early integration of pharmacy technician students

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Background: Many new pharmacy technician students feel that their first months at the pharmacy are spent observing rather than contributing – a waste of both their potential and the pharmacy's sparse resources. Increasing applications to pharmacy technician programs create a need for rapid, effective integration. This project explores how students from the start can become active in the dispensary using flow diagrams. The goal is to combine practical learning with meaningful practice. The expected outcome is to strengthen both students' confidence and the pharmacy's efficiency – benefiting both education, practice and contribution and therefore the flow diagrams can potentially be used worldwide.

Objective: The project's aim is to investigate whether the flow diagrams help students provide the required counseling, gain confidence and qualifications while taking an active part in the pharmacy's everyday work. The hypothesis is that using flow diagram as tools for counseling before receiving education helps students develop skills, gain confidence and qualifications in pharmacy counseling, and therefore is relevant to the pharmacy sector. The primary target group is first-year pharmacy technician students, as the project focuses on supporting their confidence and qualifications in pharmacy counter tasks. The secondary target group is the pharmacy sector, as students using the flow diagrams can contribute to qualified customer service early in their education.

Method: The project is based on qualitative interviews with three first-year pharmacy technician students who received the flow diagrams before performing pharmacy counter tasks. The interviews were conducted to explore whether the students benefited from the flow diagrams both academically and in terms of feeling more confident when working at the pharmacy counter.

The project author provided interview questions in advance and conducted individual interviews at the pharmacy. Responses were then analyzed using a diagram to identify frequently mentioned topics and assess whether they supported the hypothesis.

Results: Each student's answers were coded numerically (3 = yes, 2 = not sure, 1 = no), and all core questions received the maximum score, indicating a strong and meaningful effect. Question, regarding confidence, emphasizes the value of the project, as all students reported that the "step-by-step" tool provided independence, increased confidence, and

supported qualified practice. Overall, students found it easier to advise customers and appreciated having a clear, structured method during pharmacy counter tasks.

Conclusion: The results show that flow diagrams had a strong and meaningful effect on first-year pharmacy technician students, increasing their confidence, independence, and ability to perform qualified practice at the pharmacy. The step-by-step tool helped students' progress from observation to qualified practice, making customer counseling easier. Further work should expand the study to more students and develop additional flow diagrams to enhance contribution.

Pharmacy branches: An experiment promoting access to healthcare in vulnerable areas

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Background: Pharmacies are often the first point of contact with a healthcare professional. With access to healthcare and medicines becoming increasingly difficult, particularly in rural and suburban areas, and an ageing population, it has become necessary to innovate in order to meet the healthcare needs of people living in these areas without jeopardizing the pharmacy network. This solution is based on restoring pharmaceutical services without requiring the often substantial financial investment involved in opening a pharmacy.

Objective: The objective is to restore a pharmaceutical service in small municipalities that have lost their last pharmacy in the absence of interested buyers, in order to enable patients to benefit, as close to their home as possible, from pharmaceutical coverage, but also from having access to a community pharmacist and to the various tasks he can carry out : preventive and health promotion activities, therapeutic patient education programs, pharmaceutical interviews and support with chronic conditions.

Method: This innovative development has been authorized by law through the implementation of a pilot in six regions. National specifications, drawn up by the Ministry of Health, set out the basic conditions that must be met in order to set up a pharmacy branch and benefit from the financial assistance available for this purpose. Projects to establish branches are led by the pharmacist(s) who own a pharmacy located in a neighboring municipality or the pharmacy closest to the municipality where the last pharmacy closed. A branch can only be created and managed by a single pharmacy, and a pharmacy can only open one branch : the branch and the pharmacy are part of the same legal entity.

Results: During its first month of operation, one branch, located in a town of 360 inhabitants, has received more than 600 patients. Since then, it has been receiving between 800 and 920 patients every month. In addition to dispensing medication, it carries out various prevention initiatives: rapid diagnostic tests for cystitis and sore throat at a rate of one to three/month, deliveries of colorectal cancer screening kits and vaccinations. With regard to this activity, there was significant participation in the 2025 seasonal flu and Covid-19 vaccination campaign. Indeed, this branch carried out more than 150 vaccinations in this context between mid-October and December. During the same period, it carried out around 20 vaccinations against other diseases. Furthermore, as the doctor in this town has ceased practising, a teleconsultation booth will be installed in March 2026 at this branch. These elements demonstrate the importance, from a public health perspective, of restoring a local community pharmacy network.

Conclusion: This study demonstrates that the reestablishment of a local pharmacy network in areas with insufficient healthcare provision through the creation of pharmacy branches gives the population access to local healthcare services and answers to the population needs in terms of public health. The future creation of branches will thus promote improvement of the population's health through better medication monitoring for chronic diseases and a reduction in the risk of self-medication and patient non-compliance.

Defence of the professional independence of community pharmacists by regulatory bodies: Vision of French pharmacists employed in community pharmacies

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Background: Respect for the professional independence of all pharmacists is an essential condition for ensuring the quality of patient care. The expansion of public health missions carried out in community pharmacies requires increased vigilance in this regard. In this context, the FIP published a document entitled "Pharmacist Ethics and Professional Autonomy: Imperatives for Keeping Pharmacy Aligned with the Public Interest." The French Chamber of Pharmacists has also developed a booklet outlining pharmacists' ethical obligations as well as relevant European and national case law related to professional independence. A CJEU ruling dated 9 May 2009 emphasised that national legislation, such as that in France, which reserves the community pharmacies's ownership to pharmacists may help guarantee the genuine professional independence of practitioners and therefore contribute to the quality of pharmaceutical services.

Objective: Within this national framework, where the ownership of community pharmacies is restricted to pharmacists, the French Chamber's Employed Community Pharmacists Council sought to gain a better understanding of how pharmacists employed in community pharmacies perceive the respect for their professional independence. The objective was to identify potential needs in terms of education and professional support, as well as to contribute to the prevention of disciplinary disputes.

Method: The Council conducted a national study among approximately 29,000 pharmacists registered with the French Chamber. The questionnaire, validated by the Council, was distributed electronically in December 2024. The survey consisted of multiple-choice questions covering several topics related to community pharmacy practice, including the evolution of clinical responsibilities. Fifteen items were specifically dedicated to the respect of professional independence and the potential role of professional regulatory bodies in situations where this independence might be at risk.

Results: More than 3,000 pharmacists responded to the survey, which allowed for a representative sample. Among the various challenges faced by employed community pharmacists, professional independence emerged as one of the most important issues. It ranked behind other concerns such as product shortages, workplace well-being, and the recognition of pharmacists' competence within the healthcare system. More specifically, one third of pharmacists believe that their level of professional independence has deteriorated over the last ten years. More concerning, 20% of pharmacists point out that their professional independence is never or almost never preserved, particularly due to non-compliance with the therapeutic indications, as well as in cases where legislation on narcotic drugs is not respected. In addition, 41% of the pharmacists surveyed believe that the Employed Community Pharmacists Council should support them more in their clinical practice, given the risk of compromising their independence.

Conclusion: Based on the analysis of these results, the Council's working group dedicated to the respect of professional independence proposes the implementation of several professional tools compliant with quality assurance procedures, to help employed pharmacists in their decision-making. In this regard, the adoption of a new French code of ethics in March 2026, strongly centred on the respect for professional independence, will provide an opportunity to guide pharmacists on how to adopt an exemplary professional stance in their practice, and ultimately, help prevent disciplinary disputes.

Community pharmacies as accessible platforms for public health education: Evaluating expert-led health sessions for citizens

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Background: Community pharmacies are among the most accessible healthcare settings and have daily contact with a broad and diverse population, making them well positioned to support public health and prevention. Public health events held in pharmacies, where different health professionals such as physicians, dietitians, and pharmacists share evidence-based knowledge and invite dialogue, may help citizens better understand health topics in a familiar setting. Such initiatives connect scientific knowledge, healthcare practice, and public education. However, little is known about how citizens experience and benefit from this type of health communication in community pharmacies. Therefore, the aim of the project is to strengthen the connection between health science and citizens by promoting the pharmacy's role in prevention and public health through a targeted communication initiative.

Method: The project is a descriptive evaluation of a series of public health events organized at a community pharmacy in Denmark. Each event includes a presentation followed by time for dialogue and questions. Initial sessions addressed lifestyle and prevention, including diet, smoking, alcohol use, and physical activity, presented by representatives from the Danish Patients' Association and a clinical dietitian, as well as a session on common eye diseases led by an ophthalmologist. After each event, participants complete a short questionnaire using a five-point Likert scale assessing relevance, understanding, knowledge gained, usefulness in everyday life, and the value of the dialogue. The expert is also asked to complete a questionnaire. Data is analyzed descriptively.

Results: There is, to date, a general sense of satisfaction among both experts and citizens regarding the initiative, who find it relevant and express interest in participating in similar events in the future. The remaining results are presented in detail in the poster in the form of a bar chart. Perspective

Perspective: The project is expected to contribute knowledge about the role of community pharmacies as accessible platforms for health education, prevention, and dialogue in the community.

Pharmaceutical medication evaluations by the community pharmacist

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Background: Community pharmacists use various medication evaluations in the pharmacotherapeutic treatment of patients. A medication evaluation is a consultation, or a pharmacotherapeutic analysis separate from a consultation, or a medication review (Dutch: MBO - medicatiebeoordeling). To bring more structure to the different forms of consultations and pharmacotherapeutic analysis we developed a visualization. The development of the KNMP guideline Medication Review (Dutch: KNMP-richtlijn Medicatiebeoordeling) was the motivation for developing the visualization. The purpose of the visualization is to provide insight into the various medication evaluations that community pharmacists can use in response to changing patient care needs, at every phase of pharmacotherapeutic treatment, in order to ensure continuity of care and proper and medication safety. This visualization of medication evaluations by the community pharmacist is important for determining the position of medication evaluations and to organize the associated preconditions, such as remuneration for pharmaceutical care.

Method: First, an inventory was made of the various consultations that community pharmacists conduct with patients in The Netherlands. A literature review was also conducted, and the KNMP-guideline Consultation (Dutch: KNMP-richtlijn Consultvoering) was studied. The working group then held a series of workshops to map out the various medication evaluations for different patient care needs at each stage of pharmacotherapeutic treatment. This overview was then presented to pharmacists in various groups, after which comments were incorporated, and a final visualization was developed.

Results: The 'Visualization of pharmaceutical medication evaluations by the pharmacist' shows which medication evaluations the community pharmacist can use for varying patient care needs at each stage of pharmacotherapeutic treatment. The visualization highlights that care needs can be initiated by the patient, the pharmacist, or another healthcare provider. Medication evaluations can be used for incidental care needs or care needs related to a chronic condition. Care needs related to a chronic condition have a start phase and a follow-up phase. The visualization will be shown on the poster.

Conclusion: Medication reviews contribute to the timely identification of (new) pharmacotherapeutic problems and patient care needs. It is also relevant in the approach to identifying pharmacotherapeutic problems, whereby the

community pharmacist provides guidance on an intervention (monitoring & follow-up). In this way, medication evaluations help to provide continuity in pharmaceutical care. The visualization helps with the implementation of medication evaluations in practice and in policy. In addition, the visualization can be used in discussions with system parties and health insurers, for example in the funding of consultations without the provision of medicines.

Pharmacist assessment and prescribing for nicotine dependence in a community pharmacy setting

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Background: Tobacco use continues to be the largest cause of premature morbidity and mortality in Canada. Pharmacists are the most accessible health professional and are uniquely positioned to engage patients on tobacco use and cessation. In the Canadian province of Alberta, pharmacists have the legislative authority to prescribe medications including common smoking cessation therapies varenicline, bupropion and nicotine replacement therapy (NRT).

Objective: A pharmacist-led “quit smoking” program was developed and implemented in a community pharmacy in Sylvan Lake, Alberta, Canada.

Method: Pharmacist prescribing was implemented in Alberta in 2007. This will be outlined and reviewed prior to discussion about its use for the “quit smoking” program. The pharmacist-led “quit smoking” program was implemented in 2011. The program involved a pharmacist working one-on-one with a patient to assess their tobacco use history. For patients who had an interest in quitting smoking, a comprehensive care plan was developed including appropriate non-drug and drug recommendations. If a prescription was required, this was prescribed and managed by the pharmacist. The patient was followed up on a regular basis throughout their quit attempt (both in person and via telephone). If the patient experienced a relapse to smoking the pharmacist engaged with the patient to assess what could be done differently for the subsequent quit attempt. For patients who did not have an interest in quitting smoking, a motivational interviewing technique was employed by the pharmacist. Options for the patient to reduce their risk from smoking were then reviewed (including electronic nicotine delivery systems (ENDS), heat-not-burn (HNB) products and long-term use of nicotine replacement therapy including oral nicotine pouches). These recommendations are supported by the Canadian Lower Risk Nicotine Use Guidelines. Patients were followed-up following the initial visit with an aim of further supporting the patient in reducing their risk.

Results: Overall, this program has been successful in providing person-centred care to those that use tobacco. The program allows patients to engage with the pharmacist regardless of their readiness to quit in a judgement free space. The presentation will review how prescribing in Alberta works and how this program specifically supported patients ensuring access and patient autonomy.

Conclusion: The implementation of pharmacist prescribing for the purpose of smoking cessation demonstrates the usefulness of pharmacist prescribing in improving patient access and overall patient care.

Assessing digital readiness in a community pharmacy

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Background: Digital solutions play an increasingly important role in healthcare systems, including community pharmacy practice. In Denmark, pharmacies already operate within highly digitalised environments, using integrated systems that provide access to national databases such as personal identification systems and drug databases. Despite the availability of digital technologies, successful implementation depends on organisational readiness, staff competencies, and supportive leadership. The aim of this project was to explore how prepared pharmacy management and staff are to implement digital solutions in daily practice and to identify organisational factors influencing digital maturity.

Method: The project examined organisational conditions within a community pharmacy setting. Daily workflows were analysed to identify where digital solutions are currently integrated and where further digital support may be beneficial. Pharmacy staff and management were involved in assessing the digital readiness of the organisation and their experiences with existing digital tools. In addition, the study explored how leadership style and organisational culture influence staff engagement with digital initiatives. Based on these analyses, potential initiatives to strengthen digital practice and optimise workflows were identified.

Results: Preliminary findings indicate that several digital solutions are already successfully embedded in daily pharmacy operations. However, further digitalisation is influenced not only by technological availability but also by staff competencies, workflow integration, and leadership approaches to change in management. Clear leadership direction and active staff involvement were identified as important factors supporting organisational digital readiness.

Conclusion: Strengthening digital practice in a community pharmacy requires a holistic approach that integrates technology, workflows, and leadership. Assessing organisational digital readiness can help identify targeted initiatives that support both efficient pharmacy operations and high-quality pharmaceutical care.

From patient preferences to a hybrid, personalized counselling model in online pharmacy

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Background: Online pharmacies are expanding rapidly, increasing the need for counselling models that are both patient-cantered and operationally feasible. Previous research in a Danish online pharmacy context has demonstrated substantial variation in patient preferences for counselling format and content, indicating that standardized approaches may not adequately support safe and effective medicine use.

Objective: To translate patient preference data into a framework for a hybrid and personalized counselling model in online pharmacy, and to outline a next-phase study to support its operationalization and implementation.

Method: This study builds on prior mixed methods research combining survey data (n=533) and semi-structured interviews (n=10) exploring patient preferences for counselling format, content, and communication channels. Findings were analysed to identify key dimensions for counselling design, including delivery format, need for human interaction, and variation in counselling needs across patient contexts. Based on these findings, a conceptual model for hybrid counselling was developed, alongside a proposed qualitative study to explore patient interaction with different counselling formats.

Results: Patient preferences varied. Physical written material included in the package was preferred by 51% of respondents, while 45% favoured email-based counselling. In digital interactions, 84% preferred communication with a human rather than a chatbot. Patients prioritized information on correct medication use (75%), drug interactions (62%), and side effects (58%). A personalized counselling guide was considered helpful by 73%, particularly for first-time users. These findings support a hybrid counselling model combining physical, digital, and human elements, with differentiation based on patient experience and counselling needs. Key components include flexible delivery formats, personalized guidance for first-time users, and access to human support. For patients initiating new treatment for chronic conditions or experiencing challenges with long-term medication use,

personalized guidance may also serve as an entry point for more in-depth counselling interventions, such as structured medication reviews or counselling services.

Conclusion: Patient preference data indicate that future counselling in online pharmacy should be flexible, multimodal, and personalized rather than standardized. A hybrid counselling model represents a promising approach to balancing patient relevance and operational feasibility. A next-phase qualitative study is proposed to explore patient interaction with different counselling formats and to define functional requirements for implementation in online pharmacy IT systems. This approach may support the development of scalable and regulatorily acceptable models for digital pharmaceutical care.

The National Constitutional Eczema Project (NCEP), The Netherlands: Better eczema care, strengthening collaboration and the pharmacists' role

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Background: Patients with constitutional eczema (CE) are mainly treated with corticosteroid creams and emollients. Consistent use of these treatments is essential for managing symptoms, yet daily application—often over large skin areas—can be challenging. Clear and consistent patient information is therefore crucial. This is complicated by varying terminology among healthcare providers, differing patient leaflets, and the fact that pharmacists do not always receive the indication or treatment schedule with prescriptions.

Objective: The NCEP project aims to ensure that CE patients receive uniform, comprehensible information about their condition and treatment from dermatologists, general practitioners, and pharmacists. The goal is to improve therapy adherence, support correct medication use, and ultimately reduce eczema symptoms. To achieve this, two components were identified as essential: 1. Developing consistent, nationally and multidisciplinary supported patient information materials. 2. Strengthening the pharmacists' role and strengthening local collaboration in eczema care between dermatologists, GPs, and pharmacists. Highlighting the pharmacist's role in eczema care and the importance of receiving complete prescribing information.

Method: A multidisciplinary team—including dermatologists, GPs, pharmacists from KNMP and Service Apotheek, skin therapists, and patient representatives—collaborated to create standardized educational materials for both

professionals and patients. Terminology was first harmonized across professional groups and patients. Subsequently, brochures and visual tools were developed and tested by patients and professionals.

Results: A range of materials, including online brochures, infographics, videos, a children's video game, and consultation room tools, has been published on www.eczeemwijzer.nl. Content on established patient websites such as Apotheek.nl (from KNMP) and Thuisarts.nl (from the GP's) was revised to align with the agreed terminology and now links to the new materials. Professional associations supported nationwide implementation through webinars, publications, and targeted communication. Feedback from patients and healthcare providers informed further improvements, including translations into multiple languages.

Conclusion: The NCEP has successfully developed and disseminated high quality materials that have since been refined based on user feedback. The next phase involves an implementation project in which dermatology trainees facilitate local multidisciplinary meetings focused on eczema care and collaboration. Funding for this initiative has been granted. In addition, efforts will continue to harmonize terminology across healthcare information systems.

Quality control and stability assessment of stock galenical preparations for community pharmacy use

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Background: Galenical preparations provide essential medications for community pharmacy patients, especially when commercially available products do not meet individual needs. Many traditional stock formulations have been compounded for years with assumed stability, yet limited data exist on their stability throughout the full shelf life, particularly when transferred to dispensing containers. Quality control laboratories are crucial for ensuring these preparations maintain safety, efficacy, and integrity. This study was conducted at Gradska Ljekarna Zagreb, Croatia, to evaluate the stability of commonly used stock galenical preparations for community pharmacies.

Objective: This study aimed to evaluate the chemical, physical, microbiological, and shelf-life stability of stock galenical preparations compounded in a galenic laboratory and assess any changes that may occur throughout their assigned shelf life. It also emphasizes the role of the quality control laboratory in maintaining the quality and integrity of these preparations for community pharmacy use.

Method: An experimental study was conducted in a quality control laboratory. Each year, one batch of every stock galenical preparation undergoes a dedicated stability study covering its assigned expiry period. Samples are analyzed periodically for characteristics expected to change, including appearance, pH, viscosity, active ingredient concentration, and microbial contamination, depending on the dosage form (liquid, semisolid, solid). Stability testing is performed under long-term conditions ($25\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ / $60\% \pm 5\%$ relative humidity). Samples are analyzed at 0, 3, 6, 9, and 12 months throughout the assigned shelf life. Stability studies are performed to obtain data on: •Shelf life and recommended storage conditions •Quality and characteristics throughout the shelf life •Suitability of the formulation and packaging •Finished product specification requirements. The effect of transferring preparations from bulk stock containers into secondary dispensing containers is also evaluated. All analyses are conducted using pharmacopeial-compliant methods.

Results: The stability of each galenical preparation was assessed according to predefined specifications. A preparation was considered stable if all tested parameters remained within specification limits. Out of trend (OOT) limits were set for active ingredient content, and when applicable, for other parameters, defined as $\pm 5\%$ of the previous time point result (except the initial measurement). If any parameter was out of specification (OOS) or out of trend, an investigation was initiated. Results from all time points were interpreted, and conclusions were reviewed and approved by the head of the analytical laboratory. All preparations tested remained within specifications throughout their assigned shelf life, confirming their stability under long-term storage conditions.

Conclusion: Even longstanding stock galenical preparations require continuous quality control and stability assessment throughout their shelf life. The quality control laboratory is key in ensuring that these medications remain safe, effective, and compliant with pharmacopeial standards for community pharmacy use. Routine monitoring helps define best practices for storage, handling, and dispensing. Future studies should expand to additional formulations and explore accelerated stability testing to strengthen quality assurance protocols. Topic area Quality control and stability in pharmaceutical practice / Community pharmacy compounding

Identifying knowledge gaps in patient medication literacy: A cross-sectional evaluation of a proactive community pharmacy service

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Background: Community pharmacists play an essential role in promoting the safe and effective use of medicines through proactive patient counselling. In an era characterised by an ageing population and increasing polypharmacy, comprehensive medication literacy is crucial for optimal patient outcomes. While routine dispensing counselling often successfully covers basic administration instructions, true medication literacy requires a deeper understanding of therapeutic indications and potential safety precautions. Evaluating the effectiveness of current community pharmacy services is therefore necessary to identify specific educational gaps and continuously improve professional care standards. This study aimed to evaluate the effectiveness of a proactive counselling model within a community pharmacy setting by rigorously assessing patient knowledge across three core domains: indications, dosage, and precautions. The primary objective was to identify specific knowledge deficits and correlate these gaps with medication adherence and age demographics to guide future quality improvement strategies.

Method: A cross-sectional survey was conducted in a community pharmacy. Data were collected through structured, face-to-face interviews with patients receiving active pharmaceutical care during the dispensing process. Initially, 165 patients were enrolled; however, 62 were excluded due to incomplete responses, resulting in a final analytical sample of 103 valid cases. Medication adherence was assessed using the 4-item Morisky Medication Adherence Scale (MMAS-4), stratifying patients into a high adherence group (score of 0) and a suboptimal adherence group (score ≥ 1). To ensure rigorous safety standards, patient knowledge was evaluated using a strict "all-or-nothing" binary criterion: adequate knowledge was recorded only if the patient could correctly identify the specific domain (indication, dosage, or precaution) for every single medication in their prescribed regimen.

Results: Among the 103 evaluated patients, the proactive counselling model demonstrated high efficacy in instilling basic administration knowledge. When stratified by adherence, patients with high adherence exhibited superior dosage knowledge compared to those with suboptimal adherence (93.88% versus 87.04%). Interestingly, the understanding of therapeutic purposes revealed a systemic knowledge gap, remaining remarkably similar and critically low regardless of adherence levels (40.82% versus 40.74%). The most profound deficit was observed in safety awareness: only 14.29% of highly adherent patients and 11.11% of

suboptimal adherers could accurately recall the precautions or potential side effects for their entire medication regimen. Furthermore, demographic cross-tabulation revealed that older adults (≥ 65 years) represent a significantly higher-risk group. Older patients achieved a lower rate of perfect adherence compared to younger patients (44.4% versus 51.0%) and exhibited a worse overall mean MMAS-4 score (0.98 versus 0.75), indicating greater barriers to consistent medication use.

Conclusion: The findings demonstrate that while proactive community pharmacy services successfully ensure patients know how to administer their medicines, significant universal gaps remain in understanding the underlying reasons for therapy and anticipating potential risks. Additionally, older adults face magnified adherence barriers. To advance patient-centred care, pharmacists must shift their counselling focus beyond basic instructions. Future interventions require targeted education on drug safety and tailored adherence support specifically designed to mitigate risks in geriatric populations.

The effect of backorder notifications when prescribing on workflow in Danish community pharmacies

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Background: Backorders of medicine has been, and continues to be, a big and time-consuming problem at pharmacies in Denmark. From the 1st of December 2025, the online prescribing platform in Denmark, Fælles Medicin Kort (FMK), has added a feature, that notifies the doctor if the drug they are prescribing, has been on backorder, for more than 7 days. It encourages the doctor to find an alternative treatment, as the medicine most likely will be out of stock at most pharmacies. This feature could be timesaving, as it solves the issue early on. The patient wouldn't have to go to a pharmacy, be told the drug is unavailable, then go back to the doctor and back to the pharmacy again. This could all around make for a better experience for the patient as well as save time and resources for the doctor and the pharmacy. In this study, it has been investigated whether this new feature will help at the community pharmacy.

Method: It has been investigated whether the new feature in FMK has saved any work and time at the pharmacy. To do this 2-3 drugs (or more) that have been on backorder at the time this feature was implemented and for a few months afterwards were selected. The study was done at the pharmacy through the digital system Pharmanet used for dispensing prescriptions. Comparing with a similar time period where the same drug has been on backorder, but before the feature was added. Manually comparing by

filtering for product number and whether the dispensing went through or not (marked as deleted or completed).

Results: It has been manually counted how many prescriptions of drugs on backorder the pharmacy has dealt with. For chloramphenicol eye ointment: In the period of 1/12-24 to 30/3-25 there were 260 prescriptions received at the pharmacy. In the same period, but a year later, there were 187 prescriptions received. This is a reduction of 73 prescriptions. If looking only at the months before and after the addition of the feature to FMK, the results are the following. In the month before the addition of the feature, November 2025, there were 90 prescriptions received. In the month after the addition, December 2025, there were 47 prescriptions received. This is a reduction of 43 prescriptions.

Conclusion: From the current results it seems that less prescriptions of certain drugs are made in the period after implementing the feature. When comparing both from year to year, as well as month to month, the pharmacy received far less prescriptions of the backordered drugs. These results are however subjected to potential errors such as backorders temporarily restocking, therefore resetting the 7-days threshold required to trigger a notification. The current results are based only on one specific drug. Several drugs are currently on backorder, and these have yet to be analysed. This study is ongoing.

AI in Danish pharmacies: Strengthening professional expertise and patient advising

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Background: Artificial intelligence (AI) enables computers to emulate elements of human-learning, problem-solving, and decision-making. In community pharmacy practice, AI has the potential to strengthen the knowledge base of pharmacists and pharmacy technicians, support up-to-date guideline adherence, and contribute to consistent, dependable patient advising, while still relying on professional judgement for final decisions.

Objective: The project aims to design and evaluate an AI-driven decision-support tool (Microsoft Copilot, AI agent) grounded in validated Danish healthcare information sources, such as Sundhed.dk. The primary objective is to enhance the quality, consistency, and evidence base of pharmaceutical advising in community pharmacies. Additionally, the project seeks to identify which patient groups and advising scenarios benefit most from an AI-driven decision-support tool.

Method: The project consists of four stages. Stage 1 involved designing, generating, and iteratively refining the AI tool within Microsoft Copilot, followed by initial testing to identify errors and guide improvements. Stage 2 focused on developing an anonymous, purpose-designed questionnaire to assess attitudes toward AI among pharmacists and pharmacy technicians at Marselisborg Pharmacies, including interest in AI training. Data were collected in spring 2026 via Microsoft Forms[®] and analysed in Excel[®]. Stage 3 (to be completed before FIP 2026) will involve structured training for 12 participants, who will complete six fictitious cases and may use the AI-tool in up to three. Stage 4 will evaluate both the tool and the training session through a structured open-forum group interview and an additional anonymous purpose-designed questionnaire. Data will be collected in spring 2026 via Microsoft Forms[®] and Word[®] and analysed in Excel[®].

Results: Initial testing demonstrated that the AI-tool could generate structured, clinically relevant, and guideline-oriented recommendations for advising scenarios. However, testing also confirmed the ongoing need for professional oversight, for example, the tool recommended ibuprofen for fever in a three-year-old child, contrary to current Danish guidelines. Forty-one pharmacy staff (87% response rate) completed the questionnaire. Most respondents believed AI would become an important part of community pharmacy work (78%) and improve organisational efficiency (80.5%). Participants reported that AI could strengthen professionalism (73.2%), expand their knowledge base (80.5%), provide validated answers (68.3%), save time (68.3%), and support consistency in advising (68.3%). Additionally, 51.2% considered AI relevant to their current tasks. Concerns were also noted: 46.3% feared reduced collegial sparring, and opinions on job replacement were mixed. While 73% felt comfortable using AI in patient advising, those lacking confidence highlighted concerns about errors, data security, rapid technological change, and ethical considerations. Many (73%) indicated that thorough training would increase their confidence. Data from stages 3 and 4 will be presented at the conference.

Conclusion: Preliminary findings indicate that an AI-driven decision-support tool based on validated Danish healthcare sources can strengthen evidence-based advising in community pharmacies. While the tool provides relevant and structured recommendations, professional judgement remains essential. Upcoming stages will offer further insight into practical performance and user experience. Overall, AI appears to be a valuable tool, not a replacement, to pharmaceutical advising in community pharmacy practice.

Simple, safe and effective: Lessons From 1000+ pharmacy vaccinations

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Background: Community pharmacies in Norway have become an increasingly important part of vaccination, offering accessible, low threshold services. To understand what drives a successful vaccination service, it is valuable to examine patient reported experiences at scale. This study summarizes key success factors derived from over 1000 customer feedback responses. They are collected in Norway's leading pharmacy chain during 2025. The analysis reveals clear patterns related to accessibility, workflow efficiency, professional competence, and perceived safety—elements essential for maximizing vaccination uptake and ensuring high quality service delivery.

Method: A qualitative synthesis was conducted based on 1000+ free text comments from customers who received vaccinations at Norwegian community pharmacies. All comments were systematically reviewed and grouped using AI/Copilot into thematic categories. Representative statements were identified to illustrate recurring themes. While the feedback provides valuable insight into what patients perceive as successful elements of the vaccination service, the method has notable limitations. Because the analysis is based solely on positive customer comments submitted voluntarily, it does not capture the full spectrum of patient experiences. The dataset lacks systematic reporting of negative or neutral feedback, and therefore does not provide insight into potential pain points, unmet expectations, or barriers experienced by less satisfied users. As a result, the findings primarily highlight strengths rather than offering a complete evaluation of service quality.

Results: Across sites and regions, pharmacy users consistently highlighted several key success factors. The most dominant theme was patient experience, with comments emphasising friendliness, empathy and a strong sense of being well cared for. Customers frequently noted that staff were “friendly, welcoming, calm and caring”, often mentioning that fear of needles was handled professionally and with patience. Efficiency and minimal waiting time were the next most prominent strengths. Many reported receiving their vaccine within minutes, often without prior booking. Statements such as “it only took 5 minutes from arriving to finished” and “no waiting time even without an appointment” were highly recurrent. Customers also highlighted professional competence and high quality information, describing staff as knowledgeable, reassuring and thorough in explaining procedures and possible side effects. Hygiene routines and structured pre screening contributed further to perceived safety. Finally, small touches such as offering water, coffee or a place to sit during observation strengthened the overall patient experience.

Conclusion: Customer feedback underscores that successful pharmacy based vaccination in Norway is driven by a combination of professional competence, efficient service delivery, flexible access models, and an exceptionally positive and reassuring patient experience. These factors create a scalable, trusted and patient centred vaccination service that effectively supports national public health goals.

Case Study – Monitoring Overweight in an Adolescent in a Community Pharmacy

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Background: Obesity is a major public health issue and a risk factor for chronic diseases. It results from an imbalance between energy intake and expenditure, often due to high-calorie diets and sedentary lifestyles, leading to fat accumulation and elevated blood sugar. Effective weight management in adolescence is critical to improve quality of life, reduce long-term health risks, and prevent chronic conditions. Interventions typically include lifestyle modifications, dietary adjustments, increased physical activity, and, in some cases, pharmacological or surgical approaches. Community pharmacists, due to their accessibility, play a key role in supporting patients through monitoring, counseling, and health promotion. At the Central Pharmacy in Portugal, consultations for overweight and obesity management have been conducted since 2014 as part of a pharmaceutical service. This poster presents the follow-up of one adolescent patient enrolled in this service, illustrating the impact of pharmacist-led interventions.

Method: The participant was a 14-year-old adolescent with overweight, accompanied by their mother, seeking weight management support. The consultation process was divided into two phases: Phase 1 – Screening and Measurements: Anthropometrics: weight, height, BMI, waist circumference Physiological: blood pressure, pulse Biochemical: fasting blood glucose, total cholesterol All measurements performed by a community pharmacist using calibrated equipment Phase 2 – Comprehensive Consultation: Therapeutic review of all current medications Detailed assessment of lifestyle and dietary habits using a structured questionnaire Motivational interviewing with adolescent and mother to understand readiness and goals Education on reading food labels and selecting foods according to energy needs, age, weight, and physical activity Personalized lifestyle counseling on diet and physical activity Provision of a food diary booklet for daily intake recording. Follow-up assessments were conducted monthly on 24 July, 13 August, 10 September, 9 October, and 14 November 2025.

Results: Body Composition: Baseline: Body fat 39.7%, muscle 28.5%, BMI 26.3, weight 63.9 kg, waist 87 cm Final: Body fat 36.7%, muscle 29.4%, BMI 23.9, weight 58.2 kg, waist 73 cm Biochemical & Clinic: Blood glucose increased from 72 to 98 mg/dL Total cholesterol decreased from 211 to 141 mg/dL Blood pressure ranged 104/67–125/71 mmHg; pulse 57–69 bpm Observations: Clinically meaningful improvements in BMI, waist circumference, body fat, and cholesterol were observed.

Conclusion: Structured, pharmacist-led interventions, including therapeutic review, motivational interviewing, and individualized lifestyle education, can effectively support adolescents in adopting healthier behaviors. Providing written materials and a food diary encourages self-monitoring, and parental involvement enhances adherence. In this case, the adolescent improved from an overweight BMI to a BMI within the normal range, from elevated total cholesterol to within reference values, and from an elevated waist circumference—a predictor of cardiovascular risk—to normal values. This illustrates the potential of community pharmacist-led interventions to produce clinically meaningful improvements in metabolic and anthropometric parameters. The pharmaceutical service demonstrates how early, structured, and personalized pharmacist engagement can motivate lifestyle changes and reduce cardiovascular risk in adolescents.

Assessment of Lipid profile and impact of a community pharmacist-led health education intervention in university students: A pilot pre-post study protocol

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Background: Cardiovascular diseases (CVD) remain one of the leading causes of mortality and morbidity worldwide. Atherosclerosis, characterized by the accumulation of lipids and cholesterol in arterial walls, is a key underlying mechanism that can lead to serious cardiovascular events. CVD risk factors are classified as non-modifiable (age, sex, genetic predisposition) and modifiable, including hypertension, diabetes, dyslipidemia, obesity, unhealthy diet, sedentary lifestyle, smoking, and excessive alcohol consumption. Dyslipidemia is a major modifiable risk factor, and lipid profile assessment is essential for early detection. Although more prevalent in older populations, lipid alterations may already be present in young adults. Early identification and intervention may therefore contribute to long-term cardiovascular risk reduction. Objectives- This study aims to evaluate the lipid profile of university students aged ≥18 years and to assess the impact of a health education

intervention on total cholesterol, LDL cholesterol, HDL cholesterol, and triglycerides in participants presenting lipid alterations. Secondary objectives include characterizing dietary habits, physical activity, alcohol consumption, and smoking behaviors, as well as evaluating lifestyle changes following the intervention and its feasibility in a university setting.

Method: A pilot pre-post intervention study with an educational component and a control group will be conducted at the Egas Moniz University Institute (Monte de Caparica, Portugal). A convenience sample of first- and second-year students aged ≥18 years who provide informed consent will be recruited. Baseline assessment will include a structured questionnaire to collect sociodemographic data and information on dietary habits, physical activity, alcohol consumption, smoking behaviors, and chronic diseases. Lipid profile screening will be performed by a community pharmacist using validated methods and calibrated equipment. All participants will receive their lipid profile results. Participants with total cholesterol ≥200 mg/dL, LDL cholesterol ≥130 mg/dL, and/or triglycerides >175 mg/dL will be allocated to the educational intervention group, while those with lipid values within reference limits will constitute the control group. The intervention will consist of a health education session delivered by a community pharmacist. Participants will receive recommendations on balanced nutrition, regular physical activity, and modification of risk behaviors, supported by educational materials accessible via QR code. A follow-up assessment will be conducted two months after the intervention. Data will be analyzed using IBM SPSS Statistics® v30. A literature review will also be conducted using PubMed, SciELO, B-On, and ScienceDirect, with references managed using Mendeley.

Results: Data collection is currently ongoing. To date, lipid profile assessments have been performed in 60 students, and recruitment is expected to reach approximately 120 participants. Data analysis is in progress, and final results are anticipated in June.

Conclusion: Although definitive conclusions cannot yet be drawn, this study is expected to provide insights into lipid profile patterns among young adults and the potential impact of pharmacist-led educational interventions on cardiovascular risk factors. The findings may demonstrate that lipid profile screening and health education delivered by community pharmacists can increase awareness and encourage healthier lifestyle behaviors among university students, highlighting the role of pharmacists in early identification and prevention of cardiovascular risk.

The implementation gap: Perceived barriers and external threats to community pharmacists' participation in a career advancement scheme in Nigeria

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Background: Career progression pathways are increasingly recognized as essential mechanisms for strengthening professional practice, improving workforce motivation, and expanding pharmaceutical services. In Nigeria, the Association of Community Pharmacists of Nigeria recently established the Community Pharmacists Assessment and Career Progression Institute (CPACPI) to provide structured professional development, accreditation, and improved recognition for community pharmacists. This study examined perceived barriers and external threats influencing community pharmacists' willingness to participate in the scheme.

Method: A cross-sectional survey of community pharmacists practicing in Nigeria was conducted a validated electronic questionnaire distributed through professional networks. The instrument captured information on perceived participation barriers and external threats to enrollment in the scheme. Descriptive statistics summarized frequencies and proportions of identified barriers and threats. Inferential analyses using chi-square tests examined whether perceived barriers and external threats differed significantly by pharmacist characteristics. Statistical significance was set at $p < 0.05$ for all analyses, using R.

Results: A total of 182 community pharmacists participated in the survey. Most respondents were male (61.5%), and the largest age group was 30–39 years (39.0%). The most frequently reported participation barriers were workload pressures (68.6%), time constraints related to practice demands (67.6%), and financial costs associated with training and certification (66.7%). Approximately 61% of respondents indicated that operational pressures within community pharmacy practice could limit sustained engagement with the scheme. Pharmacists with fewer than 20 years of professional experience reported significantly greater concern about financial barriers compared with more experienced pharmacists ($\chi^2 = 5.92$, $p = 0.015$). Respondents identified several systemic threats to community pharmacy practice that may affect participation in the scheme: weak regulatory enforcement within the pharmaceutical sector (75.3%), the

proliferation of illegal medicine outlets (69.2%), and competition from patent medicine vendors (58.8%). Perceived regulatory weakness was significantly associated with pharmacists practicing in highly urbanized practice environments ($\chi^2 = 4.87$, $p = 0.027$).

Conclusion: Community pharmacists in Nigeria recognize substantial operational barriers and systemic threats that may constrain engagement with structured career progression initiatives. Addressing workload pressures, financial constraints, and regulatory weaknesses will be essential to ensure successful implementation and sustainability of competency-based professional advancement frameworks for community pharmacy practice.

Dispensing of Hospital-Only Medicines in Community Pharmacies: A One-Year Update on Patient Access and Adherence in Portugal

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Background: Access to essential medicines is a critical component of healthcare, particularly for patients requiring long-term treatment or specialised therapies dispensed in hospital pharmacies. However, logistical barriers such as travel distance, limited mobility and time constraints hinder patients' adherence to therapy. To address these challenges, the access in proximity to hospital-only medicines service has been implemented in Portugal since the COVID-19 pandemic. This initiative allows patients to collect medicines from registered community pharmacies, rather than exclusively from hospital pharmacies. By decentralising the dispensing process, the service aims to improve convenience, optimise healthcare resources and improve medication adherence.

Method: The national legislation that led to the implementation of the service at national level was published on 29 December by Decree-Law No. 138/2023. The programme framework sets strict eligibility criteria for both patients and participating pharmacies. Patients undergo consultation at the hospital pharmacy and are selected based on clinical stability, treatment complexity and ability to comply with protocols. Participation by community pharmacies is voluntary but requires official registration with the National Authority of Medicines and Health Products (INFARMED), I.P., and compliance with the professional

standard published by the Portuguese Pharmaceutical Society (PPS), ensuring patient safety and medicine integrity. Pharmacists in registered community pharmacies must undergo mandatory training recognised by the PPS to participate. Continuous data collection and evaluation processes assess the service's efficiency and effectiveness.

Results: Under the national framework established by Decree-Law No. 138/2023, the proximity dispensing system began its nationwide rollout in December 2024, with the first supply on 5 December and the first community pharmacy dispensing on 9 December. Despite an initially slow implementation the programme expanded progressively across the country. One year after the planned full implementation date, in March 2026, the system had reached 1,508 patients and 18 Local Health Units (ULS) plus one Oncology Institute (IPO) onboard. Over the course of this first year of implementation, there has been excellent progress, increasing from 22 dispensations in January 2026 to 1,508 patients integrated across virtually all ULS/IPO units in the country. The service continues to cover 150 active substances across multiple therapeutic areas, with potential for future expansion to medical devices, oral antineoplastics, and other treatments. Supported by a nationwide network of community pharmacies (1,433 already accredited) its operation is reinforced by mandatory training recognised by the Portuguese Pharmaceutical Society, with 2,688 pharmacists already certified. Evidence from previous pilot initiatives remains consistent: patients historically travelled 100–112 km per hospital visit and saved around 260 euros annually when collecting medicines in community pharmacies. National studies show that 91% of patients prefer proximity dispensing, reporting higher satisfaction, reduced travel burden, and improved adherence.

Conclusion: The introduction of the proximity access service for hospital-only medicines in Portugal is a major step towards patient-centred healthcare. The initiative has decentralised dispensing, increasing accessibility, reducing logistical burdens and improving medication adherence. Initial outcomes suggest uptake among patients and health professionals, with advantages including optimised hospital pharmacy resource use and continuity of treatment.

Strengthening access to care through pharmacist-led management of minor ailments: The Portuguese context and international benchmarking

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Background: Minor ailments are non-serious, self-limiting conditions that, despite their low clinical complexity, generate substantial demand on health systems, including primary care and emergency services. In Portugal, increasing healthcare demand, driven by population ageing and chronic disease, has reinforced the need for new care models for these conditions. Community pharmacists are well placed to contribute through counselling, treatment of minor ailments, responsible medicine use and referral when needed. International evidence shows that pharmacist-led minor ailment schemes can improve access to care, reduce avoidable medical consultations and emergency visits, and support health system efficiency and sustainability. This work describes the Portuguese context for pharmacist intervention in minor ailments and compares current national developments with structured models in other countries.

Method: A descriptive policy and practice analysis was undertaken based on the Portuguese Pharmaceutical Society's review of pharmacist intervention in minor ailments and an international benchmarking exercise. The Portuguese analysis considered pharmacy capacity, accessibility and policy developments. The international comparison included pharmacist-led minor ailment services in the United Kingdom, Ireland, France, Spain, Switzerland and Canada, focusing on service scope, legal frameworks, eligible conditions and implementation features. Broader international evidence, including work by FIP and PGEU, was also considered.

Results: Portugal has a strong community pharmacy network, with 2,921 pharmacies and 191 mobile pharmacy units, corresponding to around 30 pharmaceutical outlets per 100,000 inhabitants, and approximately 11,010 pharmacists working in community pharmacy. Pharmacies are widely distributed across the country and receive about 170 visits per pharmacy per day, representing close to half a million daily visits nationwide. In practice, Portuguese community pharmacists already manage minor ailments through symptom assessment, pharmaceutical counselling,

recommendation of non-prescription medicines, simple testing when appropriate and referral of more complex cases. However, these activities are not yet fully integrated into a formal national service model. Internationally, structured pharmacist-led schemes are established in several countries. England's Pharmacy First service covers seven defined conditions without prior medical consultation. Ireland has introduced a national Common Conditions Service covering eight conditions. France has cooperation protocols for uncomplicated urinary tract infections and sore throat. Spain has long-standing pharmacist consultation services for minor ailments. Switzerland's netCare model combines pharmacist management with medical support when needed, and Canada funds minor ailment schemes in several provinces. In Portugal, a pilot programme for pharmacist management of simple acute conditions was included in the 2024 State Budget.

Conclusion: Portugal has the professional capacity, territorial coverage and policy rationale to implement a structured pharmacist-led minor ailments service. International experience suggests that such models can improve timely access, relieve pressure on primary care and emergency departments, and increase system efficiency. A Portuguese pilot, supported by formal protocols, referral pathways, interprofessional communication and robust monitoring, would represent an important step towards a more accessible, integrated and sustainable health system.

Pharmacist-led neuropathy screening identifies sensory deficits and glycaemic risk in adults living with diabetes

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Background: Diabetic peripheral neuropathy remains one of the most common long-term complications of diabetes mellitus and may develop gradually before patients recognise symptoms or receive formal foot assessment. Early identification is important because sensory loss increases the risk of ulceration, delayed wound recognition, infection, and avoidable lower-limb complications. Although annual diabetic foot assessments are recommended, many patients living with diabetes do not receive regular screening because of limited access to primary care or delayed routine follow-up. Nonetheless, community pharmacists routinely interact with patients living with diabetes and may help identify early risk through brief screening approaches which complement routine diabetes care. A simple monofilament assessment may therefore provide an accessible opportunity to identify possible sensory changes and reinforce preventive foot-care awareness and education for patients. Moreover, pharmacist

involvement may be especially valuable for patients who attend the pharmacy regularly for diabetes medication refills but have limited recent contact with other parts of the healthcare system.

Method: A quality-improvement pilot program was conducted at a high-volume community pharmacy in Ontario, Canada, between August 2025 and February 2026. Adults living with type 1 or type 2 diabetes were offered a brief 10 g monofilament screening if they had no known diagnosis of diabetic neuropathy and had not received a formal foot examination within the previous 12 months. Screening involved monofilament assessment at the plantar surface of the great toe and was designed as a brief adjunct to routine pharmacy diabetes care rather than a replacement for comprehensive diabetic foot examination. Glycated haemoglobin (HbA1c) values were documented where available to explore concurrent glycaemic status. Eight patients did not have recent HbA1c values available at the time of screening.

Results: A total of 105 patients were screened. Reduced sensation suggestive of possible neuropathic change was identified in 34 patients (32%), while 71 patients (68%) demonstrated preserved sensation on monofilament testing. HbA1c data were available for 97 patients, of whom 45 (46%) had values above 7.0%, indicating suboptimal glycaemic control despite many patients not yet demonstrating sensory loss. Several patients with preserved sensation also had elevated HbA1c values, suggesting ongoing future neuropathy risk despite absence of detectable sensory impairment at screening. The screening process required approximately five to ten minutes per patient and was integrated into routine pharmacy workflow without major disruption. Patients with reduced sensation or other concerning findings were advised to urgently seek follow-up with their primary care provider for further diabetic foot assessment.

Conclusion: Brief pharmacist-led monofilament screening identified a meaningful proportion of patients with possible sensory deficit and also highlighted persistent glycaemic risk among those without current sensory loss. Community pharmacy may provide an accessible setting for early neuropathy risk identification, reinforcement of preventive foot-care messages, and referral for formal diabetic foot evaluation when appropriate. This is particularly important as many patients do not complete routine foot screening despite living with diabetes for multiple years.

Building travel health capacity in community pharmacy: service growth following pharmacist certification and programme development

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Background: International travel continues to create demand for accessible pre-travel health services, particularly for vaccine counselling, malaria prevention, and destination-specific risk assessments. Community pharmacies are increasingly positioned to provide travel health support because of accessibility, prescribing capacity, and vaccine administration services. Moreover, travel medicine delivered through pharmacy may also help improve access for patients who seek pre-travel advice late or are unable to secure timely appointments through traditional travel health clinics. Nevertheless, sustainable growth in travel medicine within pharmacy practice often depends on deliberate programme development, internal workflow planning, and pharmacist competency development. In August 2023, a structured travel health programme was introduced across two high-volume community pharmacies in Ontario, Canada. This later coincided with two pharmacists obtaining formal certifications through the International Society of Travel Medicine (ISTM) in February 2024, alongside broader internal efforts involving staff training, service promotion, and appointment coordination.

Method: A retrospective quality-improvement review was conducted using pharmacy service data collected before and after programme implementation. Four operational indicators were examined: total travel consultations completed, yellow fever vaccines dispensed, atovaquone/proguanil prescriptions dispensed, and total injection fees billed at the participating pharmacies. Because injection fees also reflected non-travel vaccines and other injectable services, they were interpreted only as a broad supporting indicator rather than a primary travel health specific measure. Trends were assessed across multiple periods before and after programme development, with particular attention to service growth following pharmacist certification and internal workflow refinement.

Results: Progressive increases were observed across all primary travel-related indicators after programme establishment. Travel consultation volumes increased as pharmacists became more integrated into appointment-based travel assessments and staff more consistently identified eligible patients during prescription encounters. Yellow fever vaccine dispensing also increased over time, reflecting stronger uptake of destination-specific vaccine recommendations and improved confidence in delivering travel consultations. Atovaquone/proguanil prescribing showed a similar upward trend, particularly during peak travel periods, suggesting greater pharmacist involvement in

malaria prevention planning. In addition, service growth became more noticeable during periods of higher seasonal travel demand, suggesting that programme readiness allowed pharmacies to respond more effectively to predictable fluctuations in patient need. Injection fee billing also increased during the same period, although this reflected broader pharmacy immunisation activity beyond travel medicine alone. Growth was observed across both participating pharmacies, suggesting that service expansion was reproducible beyond a single site and not solely dependent on one pharmacist or one local workflow model.

Conclusion: Travel health services in community pharmacy can expand meaningfully when pharmacist certification is combined with structured programme development, staff engagement, and operational support. While certification strengthened service credibility and internal confidence, broader workflow integration appeared equally important in sustaining growth. These findings support the role of community pharmacies as accessible sites for travel medicine delivery and suggest that targeted service development can strengthen specialised pharmacy practice beyond traditional dispensing activities.

Digital competency training for pharmacists in Spain: A success case

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Background: The digital transformation of healthcare systems requires pharmacists to develop advanced digital competencies that enable them to optimise medicine management, make effective use of health information, and operate confidently in increasingly digitalised care environments. In Spain, a pioneering nationwide training initiative has been launched to strengthen these competencies and support pharmacists' professional development through a flexible and accessible learning model. Objectives To describe the design, structure and implementation of a national digital competency training programme for pharmacists in Spain, and to analyse its reception and participants' satisfaction.

Method: A blended learning programme (online and in-person) was developed, offered free of charge to pharmacists and funded through Next Generation EU funds under Spain's Recovery, Transformation and Resilience Plan. The programme, currently undergoing accreditation, consists of 150 hours divided into two phases: a 40-hour cross-cutting interprofessional phase including 23 asynchronous online courses shared with other professional groups, and a 110-hour pharmacy-specific phase combining asynchronous online modules (80 hours, 11 courses), synchronous webinars (10 hours, 4 sessions) and in-person sessions (20 hours, 4

courses). The face to face training takes place in the premises of the Official Pharmacists Chambers, ensuring territorial accessibility and participation from professionals across the country.

Results: As of 15 March 2026, while the programme remains in active development, more than 7,250 pharmacists from diverse professional settings have enrolled and participated. Its hybrid and modular structure allow deployment on a large scale and adaptation to different profiles within the pharmaceutical profession. Preliminary participation data show a high level of engagement and confirm the feasibility of large national training initiatives aimed at strengthening digital competencies among healthcare professionals. With a target of 4,014 pharmacists completing the full training pathway, 14% of this objective (560 participants) have already completed all cross-cutting training activities—despite being more than three months before programme completion and prior to the start of the in person phase—indicating strong progress toward meeting the programme goals.

Conclusion: This initiative represents a structured training strategy designed to promote the development of digital competencies among pharmacists and support the digital transformation of the Spanish healthcare system. Owing to its design, scope and scalability, the programme offers a roll-model that could potentially be replicated in other countries. Evaluation of its impact on professional competencies and practice will be addressed in later phases of the project.

* Additional programme information is available at www.farmaceuticos.com/lp/competencias-digitales.

Therapeutic adherence map in Spain: The role of personalized dosage systems

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Background: The World Health Organization defines therapeutic adherence as “the degree to which a person’s behaviour corresponds with the recommendations agreed with a healthcare professional”. Overall, only 50% of chronic patients adhere to their prescribed treatments, and Personalized Dosage Systems (SPD, by its Spanish acronym) are the most effective interventions to improve adherence. In 2025, the General Pharmaceutical Council of Spain, and Cinfa Laboratories, launched a study: Therapeutic Adherence Map in Spain: The Role of SPDs. Objectives Develop a national Map showing the status and evolution of therapeutic adherence programmes and SPDs in Spain, compare implementation across regions, identify best practices, and analyse opinions of community pharmacists and general population to propose measures to strengthen adherence programmes for

the benefit of patients and public administrations. Materials and

Method: In November 2024, a literature review was conducted to compile existing information on adherence and SPDs in Spain. Between June and July 2025, an opinion study was performed using online surveys with a representative sample of Spanish population. Surveys were addressed to community pharmacists, to assess their experience implementing adherence-improvement strategies and SPDs, and patients, to gather their views on SPD features and adherence services. No financial compensation was provided.

Results: 18,135 pharmacies (81% of those in Spain) were invited to participate, and responses were accepted until reaching 400 valid responses, received from pharmacists in 48 of the 52 provinces. Findings show 51% of pharmacies offering SPD services are located in urban areas; the average length of time SPDs have been implemented is 9.8 years (with 16% having offered the service for more than 15 years); the average number of SPD patients per pharmacy is 22.6; and only one in four pharmacies providing SPDs has a formal agreement with the public administration. The criteria most used to include patients in SPD services include polypharmacy (84%), other personal factors hindering adherence (73%), and sociodemographic conditions (63%). Community pharmacists are often who decide on patients’ inclusion in SPD programs. The service is provided free of charge in 33% of cases. Pharmacists identify improved adherence (98%) and greater clinical safety (91%) as the main benefits of SPDs. However, 75% highlight improved communication with physicians and reimbursement as key areas for improvement. Regarding patients receiving SPDs, 69% are 60 years or older, 28% have used the service between five and ten years, 53% take at least five medicines, and 40% participate in publicly funded programmes.

Conclusion: Patients report improved understanding of their medication, fewer confusions and forgotten doses, and less accumulation of medicines at home as benefits of SPDs. This study suggests that the use of SPDs is becoming increasingly widespread, likely due to their utility and patient satisfaction—particularly among those with polypharmacy—and because the benefits extend from patients to caregivers. However, some areas for improvement remain, particularly the need for stronger coordination between community pharmacists and primary care physicians to expand the impact and reach of these services.

Search for drug interactions based on artificial intelligence

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Background: BOT PLUS, the medicines and parapharmacy products database developed by the General Pharmaceutical Council of Spain (CGCOF), integrates new features aimed to improve pharmacists' access to drug information. In 2026, an AI-based agent has been implemented in order to facilitate faster, more precise and secure access to drug interactions information. **Objectives** Provide pharmaceutical professionals with an Artificial Intelligence-based tool that optimizes dispensing work, improves access to drugs interactions and enhances professional security.

Method: The CGCOF has developed its own Artificial Intelligence agent, integrated in BOT PLUS database and designed to look up drug interactions. The agent only uses information that is encoded in BOT PLUS, without any access to external sources, ensuring reliable answers. During its development, particular emphasis has been placed on preventing potential hallucinations through restrictions and a design aimed at providing verified information..

Results: The new version of BOT PLUS incorporates a chat consultation system that allows pharmaceutical professionals to access quickly and intuitively drug interactions information and summaries of product characteristics using natural language. The chat agent also allows users to make enquiries by brand names, active ingredients or national medicinal products codes, facilitating the interpretation of information and improving efficiency in decision making.

Conclusion: The incorporation of an AI-based agent that is focused on drug interactions and that is limited to validated information, increases the BOT PLUS commitment with technological innovation and security in dispensing tasks, consolidating it as the reference database and support for pharmaceutical professionals. **Keywords:** Artificial Intelligence, Drug interactions, consultation system, Community pharmacy, decision making, dispensing tasks.

Collaborative project involving community pharmacies in the search for missing persons

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Background: In 2024, Spain recorded 26,345 reports corresponding to 16,147 missing persons, a 6% increase compared to the previous year, according to the Missing Persons and Unidentified Human Remains Information System (PDyRH, for its acronym in Spanish)). In this context, the extensive network of Spanish community pharmacies represents a strategic opportunity to identify risk situations, raise public awareness, and collaborate effectively and in a coordinated manner with the authorities. For this reason, the General Pharmaceutical Council of Spain (CGCOF) and the National Centre for Missing Persons (CNDES, for its acronym in Spanish)) began a joint initiative that led to the 2024 campaign "Every Minute Counts" and the development of the current "Protocol for Cooperation between Community Pharmacies and the CNDES on the Prevention and Location of Missing Persons." **Objectives** To integrate community pharmacies as points for detection, prevention, and support in locating missing persons, establishing coordinated action with the National Centre for Missing Persons and the Spanish law enforcement authorities, and promoting immediate reporting and greater public awareness.

Method: A collaborative protocol was designed by the CGCOF and the CNDES, outlining the risk factors that community pharmacies can detect to help prevent disappearances, as well as the procedures for communicating with law enforcement authorities in situations of risk and the steps to follow in confirmed disappearance cases. The protocol is currently being piloted in selected provinces (Zamora and the Region of Murcia), with activity monitoring and qualitative evaluation of the process to support its future national rollout.

Results: The protocol identifies warning signs such as sudden behavioural changes, social isolation, disorientation, social exclusion, or conflictive family environments, and sets out procedures for action in confirmed disappearance cases. Direct communication channels with relevant authorities have been established, together with specific support materials to facilitate intervention from community pharmacies. Implementation of the pilot began with joint training sessions for pharmacists and law enforcement officers in Zamora and Murcia, reinforcing interinstitutional coordination and mutual understanding of roles. This process helps structure the involvement of community pharmacies as collaborating agents in the prevention and location of missing persons and strengthens communication and response mechanisms, enabling earlier detection of risk situations and coordinated action with law enforcement.

Conclusion: The integration of community pharmacies into strategies for preventing and locating missing persons highlights the value of their territorial capillarity, accessibility and high levels of public trust. Coordination with the CNDES and law enforcement authorities enhances community response, improves early detection of risk factors, and establishes a solid, scalable and replicable collaborative model at national level.

Community pharmacy action protocol on violence against women

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Background: Violence against women remains a serious structural problem that requires the active involvement of all sectors of society. Owing to their proximity, accessibility and strong community presence, community pharmacies represent a strategic resource for the detection and support of victims. To reinforce this role, the General Pharmaceutical Council of Spain (CGCOF, for its acronym in Spanish) has long collaborated with the Ministry of Equality through the Government Delegation against Gender Violence. This collaboration is framed within the agreement published in the Official State Gazette (BOE, for its acronym in Spanish) in November 2025 and the State Pact against Gender Violence. Objectives To update and strengthen the Community Pharmacy Action Protocol on Violence Against Women, providing pharmacists with clear, accessible and effective tools for early detection, support, referral and protection of victims of gender based violence within the community setting.

Method: The protocol was updated in collaboration with the Ministries of Equality and Health, incorporating new scenarios, support resources and action procedures. It includes guidance on identifying risk alerts, referral to specialised services, and activation of the Zero Protocol, which enables anonymous notification to law enforcement authorities. Implementation is supported by training activities and professional awareness raising.

Results: The updated protocol broadens the range of risk situations considered, including victims of sexual violence and third parties reporting potential cases, in addition to those already covered: women with or without dependents who do not wish to be referred, victims living with their aggressor, women who experienced violence by current or former partners in the past, and minors affected by violence perpetrated by their partners or ex partners. It also incorporates the Zero Protocol, allowing anonymous alerts to the National Police or Civil Guard when a victim refuses to file a report. Furthermore, new support mechanisms have been integrated, such as the Puntos Violeta (Violet Points), 24 hour

Comprehensive Care Centres for victims of sexual violence, and the VioGén Integral Monitoring System for cases of gender based violence. This update strengthens pharmacists' ability to detect early warning signs, enhances coordination with specialised services and law enforcement, and promotes a rapid, safe and socially responsive intervention model.

Conclusion: The updated protocol positions community pharmacies as key actors in the prevention, detection and support of victims of gender based violence. As a result of this awareness and training effort, the number of pharmacies recognised as Puntos Violeta increased from 6,000 to more than 14,000 in 2025, consolidating the pharmacy network as a trusted, safe space that improves coordination with authorities and specialised services and strengthens the overall societal response.

Spain's map of pharmaceutical services 2026 Update

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Background: Pharmacists, being part of the Health System, share a mission with patients, doctors, other health professionals and health authorities to guarantee the safe, effective and efficient use of medicines. To this end, community pharmacies provide Clinical Professional Pharmacy Services (CPPS) designed to improve the proper use and results of treatments to improve the patient's quality of life, as well as health promotion and disease prevention.

Objective: Update the CPPS data provided by community pharmacies nationwide to reflect the information presented in the first Map of Pharmaceutical Services in Spain in 2024.

Method: The General Pharmaceutical Council of Spain presented the first map of Pharmaceutical Services in 2024. Between January and February 2026, an update was carried out using a digital tool provided to all Provincial Pharmacists Chambers and Regional Pharmaceutical Councils in Spain to collect the information.

Results: Two maps were created. In 2024, a total of 177 activities were recorded. Currently, more than 200 initiatives have been reported. The first map currently includes services related to the appropriate use and outcomes of medication, such as medication adherence programs, which has been expanded through two initiatives agreed upon with the regional government to provide reimbursement to pharmacies in the Basque Country and Rioja. All pharmacies offer the Minor Ailments Service and the Medicines and Health Product Dispensing and Compounding Service, while the most widespread service is Repackaging of Medicines

using Personalized Dosing Systems, available in 16 autonomous communities (remaining stable since 2024). The second map covers 13 community health services focused on disease prevention and health promotion, where the harm prevention service—including methadone programs—shows the greatest development, followed by screening services for different pathologies. There has been an increase in the number of screenings that community pharmacies can perform in our country, including cervix cancer screening in different regions.

Conclusion: The Pharmaceutical Services Map is an initiative that highlights the patient care work performed by community pharmacies. Thanks to continuous updates, it is possible to see the distribution of CPPS across different regions and compare the evolution of community pharmacies in Spain, revealing a significant increase in the number of services provided.

Acute oropharyngeal infection service in community pharmacies: Strategy and initial results

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Background: Acute oropharyngeal infections are common conditions frequently associated with high demand for healthcare and inappropriate antibiotic use. Community pharmacies can play an important role in managing these cases through structured pharmaceutical services. However, community pharmacy interventions remain inconsistent. In many cases no diagnostic test is performed and, when testing occurs, the intervention is often limited to the rapid test alone. To address this gap, a national strategy was developed to support the implementation of a structured acute oropharyngeal infection service in community pharmacies.

Method: A phased implementation strategy was launched in November 2025. The first phase focused on pharmacist training, activation of the pharmacy network and patient-directed communication. Key initiatives included the development of a support toolkit containing a practical guide, consultation support tools, implementation videos, a list of rapid tests for detection of group A Streptococcus and patient information materials. An eLearning course and communication materials for pharmacies and patients were also developed. A launch webinar was organised for

pharmacists and the topic was integrated into routine pharmacy support visits. Service activity and pharmacy engagement were monitored using service records and digital platform analytics.

Results: The launch webinar was attended by 567 pharmacists. During the first three months of implementation (December 2025–February 2026), a total of 803 rapid tests for acute oropharyngeal infection were performed in participating pharmacies, compared with 240 tests during the same period in the previous year, representing an increase of 235%. Most acute oropharyngeal infection cases (97%) were managed directly in the pharmacy without the need for initial medical referral. Following the release of the support toolkit, online toolkit visualisations increased by 394%, from 239 to 1,180 views during the first month, with more than 27% of pharmacies accessing the materials.

Conclusion: The initial phase of the implementation strategy generated engagement from community pharmacies and supported the introduction of a more structured approach to acute oropharyngeal infection management. The observed increase in testing activity suggests improved service uptake during the early stages of implementation. Continued monitoring will be important to further evaluate the development of the service and its potential contribution to community pharmacy practice.

Impact of a provincial pharmacy-based awareness and training intervention on adult influenza and COVID-19 vaccination uptake in Quebec, Canada

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Background: Community pharmacies play a central role in adult immunization delivery in Quebec; however, vaccine hesitancy, perceived lack of need, and variability in proactive vaccine recommendation may limit coverage. Pharmacist-led interventions that address behavioral barriers and support routine vaccine discussions may improve uptake.

Objective: To evaluate the impact of a provincial pharmacy-based awareness and training intervention on pharmacist preparedness, patient-reported determinants of vaccination, and influenza and COVID-19 vaccination uptake, including co-administration.

Method: A provincial initiative was implemented in community pharmacies in Quebec, comprising accredited

online training for pharmacy personnel and prospective patient-level data collection. Pre- and post-training surveys assessed pharmacist knowledge, confidence, and workflow integration (5-point Likert scale). Participating pharmacies collected patient-level data during the 2024–2025 and 2025–2026 respiratory seasons, including vaccination status, demographics, chronic conditions, vaccination location, and determinants of vaccine decision-making. Descriptive analyses were conducted, with preliminary comparisons by training exposure using data collected between October 14, 2025 and January 30, 2026.

Results: Pharmacist preparedness improved following training, with mean scores increasing from 3.94 to 4.49, including gains in knowledge of influenza and COVID-19 epidemiology, confidence in co-administration, vaccine communication, and workflow integration. A total of 1,145 patients (mean age 64.7 years; 56% female; 62% with at least one chronic condition) were included from 22 pharmacies. Vaccination uptake was high, with 75% receiving COVID-19 vaccination, 92% influenza vaccination, and 73% receiving both vaccines, compared with 65% co-administration in the previous season. Vaccination occurred predominantly in pharmacies (88% COVID-19; 85% influenza). Pharmacy interactions played a key behavioral role, influencing vaccination decisions for 34% of COVID-19 and 44% of influenza recipients. Influenza vaccination demonstrated strong repeat behavior (71%), while COVID-19 uptake reflected both conversion (18%) and attrition (9.7%). The primary barrier to vaccination was perceived lack of need, while access barriers were secondary. Training exposure was associated with higher COVID-19 uptake (47% vs 34%; 38% relative increase).

Conclusion: A provincial pharmacist-led behavioral intervention was associated with high influenza and COVID-19 vaccination uptake and increased co-administration in community pharmacy settings. The strong influence of pharmacy interactions on patient decision-making highlights the role of community pharmacists as key behavioral drivers of immunization. Addressing perceived lack of need and strengthening proactive recommendation strategies may further improve vaccine coverage. This approach provides a scalable model to support population-level immunization programs.

Reinforcing opioid agonist treatment through community pharmacies: Collaborative implementation

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Background: Community pharmacies constitute one of the most accessible and widely distributed health resources in Portugal, offering a trusted point of contact for people across diverse social and geographical contexts. Their capillarity, opening hours and integration within local communities position them as key partners in delivering person-centred, low-threshold health interventions. In the field of substance use care, such characteristics are particularly relevant for promoting equitable access, reducing stigma and supporting the human rights of people who use drugs, including the right to health, dignity and non-discrimination. Opioid agonist treatment (OAT), particularly with methadone hydrochloride, plays a critical role in the national response to opioid dependence. A previous OAT model (1998–2013) demonstrated the contribution of community pharmacies in expanding access, strengthening therapeutic continuity and providing care closer to patients, in coordination with the specialised teams of the Institute for Addictive Behaviours and Dependencies (ICAD, P.I.). Building on this positive experience, a collaboration protocol was established in 2025 between ICAD, National Authority of Medicines and Health Products (INFARMED), the Portuguese Pharmaceutical Society (OF), the National Association of Pharmacies (ANF), and the Association of Pharmacies of Portugal (AFP), reinstating community pharmacies as partners in OAT delivery, in the supervised administration and dispensing of methadone hydrochloride. This work describes the collaborative implementation model and the role of community pharmacies in the OAT programme.

Method: The Programme targets patients requiring supervised administration, those facing barriers to attendance at specialised services (ETET), and individuals providing informed consent for integration in participating pharmacies. Each patient is assigned to a single pharmacy, with referrals based on the national list of accredited pharmacies. Participation requires pharmacies to meet

defined operational and training criteria, including mandatory training for the responsible pharmacists. The pharmaceutical intervention, remunerated within the Programme framework, includes supervised administration of methadone hydrochloride, supervised dispensing of doses, recording of observed and dispensed doses, adherence monitoring, early detection of adverse reactions, clinical incidents and missed doses, and structured communication with the ETET. All patient-related activities are recorded within GMET, a single mandatory digital platform that centralises clinical documentation, therapeutic monitoring and interprofessional communication. GMET is accessible to all professionals involved in each patient's care pathway, including up to two pharmacists per participating pharmacy, supporting continuity and coordinated decision-making.

Results: A joint guidance document developed with input from all participating entities is currently in preparation. In addition, the General Guideline on the Dispensing of Methadone Hydrochloride in Community Pharmacies, prepared by the Portuguese Pharmaceutical Society, is being developed to support pharmaceutical practice. The Programme is in the early implementation phase, with operational roll out planned for late April 2026. The initial phase will comprise three Portuguese regions identified as priority areas. Preliminary operational indicators and early implementation findings will be collected during the first months of the Programme and presented at the conference.

Conclusion: This intervention model strengthens a multidisciplinary, collaborative and coordinated approach across health-sector structures, enhancing accessibility, continuity and proximity of care. The planned monitoring process will support analysis of implementation progress and guide decisions in subsequent phases of the Programme.

POHp: Public Health innovation through pharmacy-based *H. pylori* screening and treatment

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Background: Gastric cancer is the fifth leading cause of cancer-related deaths worldwide and Portugal is among the most affected countries. *Helicobacter pylori* infection, although often asymptomatic, is responsible for 78% of gastric cancer cases and is highly prevalent in Western Europe, affecting 65–80% of adults. The “Opportunistic *Helicobacter pylori* Screening Program (POHp)” was implemented in Terceira Island (Azores, Portugal) to screen and eradicate *H. pylori* and promote cancer literacy. A multidisciplinary working group was established to develop the screening program. As preliminary results revealed an unexpectedly low prevalence of *H. pylori* among participants, despite the island's historically high gastric cancer incidence (age-standardized rate 19.6 cases per 100,000 residents), a second phase of POHp was implemented to validate these findings. Thus, POHp was conducted in two phases: the first using stool-based samples; followed by a second phase employing urea breath tests. This study aims to describe the second phase of POHp and present its initial results.

Method: The second phase of POHp implemented confirmatory urea breath testing in community pharmacies for individuals aged 18–75 who had previously tested negative in the first phase of POHp's, aiming to rule out false negatives in the first phase.

Results: Following the closure of the first phase of the POHp screening program in December 2024, a new operational framework was developed to implement urea breath testing in pharmacies. All informative materials were redesigned to accommodate the new test, including updated instructions for pharmacies, revised standard operating procedures, guidance for the digital registration platform, and stock management protocols. The second phase began on 4th

August 2025, and the expected duration is 12 months, aiming to reassess around 1,600 individuals who previously tested negative for *H. pylori* and continue to meet inclusion criteria. Each urea breath test requires around 30 minutes. Among the pharmacies enrolled in the first phase, 82% were retained in the second phase. Individuals who previously tested negative are invited to undergo a urea breath test in participating pharmacies. After sample collection, the test is mailed to the laboratory for analysis. Results are communicated to the participants by Azores Oncology Centre (COA), by text message (negative results) or telephone contact (positive results). The positive ones are scheduled for a medical appointment at the COA for assessment, clinical evaluation and potential prescription of eradication therapy. After eradication treatment and following an interval of 40 days, participants return to a participating pharmacy for a confirmatory urea breath test, with results communicated through the same procedures. Pharmacies do not have access to clinical results, ensuring confidentiality. At the time of submission, more than 790 individuals were evaluated.

Conclusion: Early detection and eradication of *H. pylori* infection is crucial for preventing serious disease (namely gastric cancer) and therefore reduce mortality. The POHP represents an innovative public health approach, integrating community pharmacies into opportunistic cancer prevention initiatives and achieving high population engagement. The ongoing second phase consolidates the program's commitment to screening accuracy and strengthens its potential as a scalable model for community-based screening strategies.

Expanding adult immunization in low- and middle-income countries: Policy opportunities for community pharmacist vaccination

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Background: Many low- and middle-income countries (LMICs) continue to experience low adult vaccination coverage, limiting the prevention of vaccine-preventable diseases. Barriers to optimal immunization rates include constrained healthcare infrastructure, shortages of trained healthcare workers, and limited access to services in rural and underserved areas. Community pharmacists are among the most accessible healthcare professionals and represent an underutilized workforce that could expand immunization capacity. In several high-income countries, pharmacists routinely administer vaccines and contribute to improved vaccination coverage. However, policies and training enabling pharmacist vaccination remain uneven or absent across many LMICs.

Method: To better understand the global policy landscape, we conducted a poll of LMIC stakeholders who participate in the Partnership for International Vaccine Initiatives (PIVI) to assess their country's current status of regulatory and policy frameworks allowing community pharmacists to administer vaccines. Responses were analyzed to identify enabling policies, implementation models, and common barriers. Evidence from high-income countries and emerging LMIC initiatives was also reviewed to examine the impact of pharmacist-administered vaccination on access, uptake, and health system resilience.

Results: Preliminary findings suggest that while some LMICs have begun authorizing pharmacists as immunizers, many lack clear regulatory frameworks, standardized training requirements, or integration of pharmacists into national immunization strategies. Respondents identified policy gaps, regulatory restrictions, and limited training opportunities as key barriers. Evidence from countries where pharmacist vaccination is established demonstrates increased accessibility of vaccination services, improved vaccine uptake, reduced burden on healthcare facilities, and enhanced capacity to respond to public health emergencies.

Conclusion: Expanding policies that authorize pharmacist-administered vaccination offers a high-impact opportunity to strengthen adult immunization programs in LMICs. Integrating pharmacists into national vaccination strategies can rapidly expand access—particularly in underserved communities—while enhancing health system resilience and pandemic preparedness. This session will provide practical, actionable strategies to support implementation in community pharmacy settings. Policymakers, professional organizations, and public health leaders should prioritize regulatory reform, standardized training, and clear operational guidance to fully leverage pharmacists as immunization providers.

The role of pharmacists in identifying type 2 diabetes risk in the community: A cross-sectional study conducted in collaboration with the Mersin Pharmacists Association

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Background: Diabetes is a metabolic disease characterized by chronic hyperglycemia and is associated with the

development of various systemic complications over the long term, such as cardiovascular disease, neuropathy, nephropathy, and retinopathy. In recent years, the role of the pharmacist has shifted from product distribution to comprehensive patient-centered care, which is critical in the management of chronic diseases and in reducing the economic burden on health systems. This study aimed to assess the risk of type 2 diabetes in the community, refer high-risk individuals to healthcare facilities for early diagnosis, and raise public awareness by emphasizing the preventive and counseling role of pharmacists in healthcare services.

Method: This cross-sectional study was conducted on May 3, 2025, at a public information stand set up in a shopping mall, as part of the Mersin Chamber of Pharmacists, 25th Region, affiliated with the Turkish Pharmacists Association, during the Pharmacy Day events, after obtaining approval from the scientific ethics committee. The study included individuals aged 18 and over who voluntarily agreed to participate. The questionnaire was administered through face-to-face interviews conducted by pharmacists registered with the Mersin Chamber of Pharmacists and students from the Faculty of Pharmacy at Mersin University. It consisted of two sections: the first section covered demographic characteristics and participants' perspectives on pharmacy services, while the second section included the Turkish Diabetes Foundation Diabetes Risk Test. Participants who had not previously been diagnosed with diabetes answered the survey questions in the second part of the questionnaire. Diabetes risk score criteria were used to determine low and high-risk groups. High-risk participants were informed and referred to appropriate healthcare facilities.

Results: The study found that 80.5% of the 1210 participants trusted pharmacists' advice regarding treatment management. The survey determined that 892 individuals had not been diagnosed with diabetes. According to the diabetes risk assessment score, of individuals without a diagnosed diabetes, 81.2% (n=724) were classified as low-risk and 18.8% (n=168) as high-risk. A statistically significant relationship was found between diabetes risk and gender, age, and body mass index (p=0.001).

Conclusion: The study found that one in five people without a diagnosis of diabetes was at high risk. Pharmacists play a vital role in protecting public health through their contributions to the early diagnosis, patient education, and treatment management of diabetes. Early identification of individuals at risk of diabetes by pharmacists and effective management of the treatment process for these individuals will contribute to both individual health and the national economy.

Developing an implementation framework for pharmacist-led ferritin point-of-care testing in community pharmacy

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Background: Ferritin is a key biomarker of iron storage and significant in the assessment and monitoring of iron deficiency and iron therapy. While laboratory testing is accurate and patient accessible on the national health service, it is resource-intensive and associated with turnaround times that may delay management decisions. Pharmacist-led point-of-care testing (POCT) in community pharmacy could enable timely assessment, improve access to monitoring and strengthen pharmacists' contribution to patient-centric care. The aim of the study was to develop and validate a pharmacist-led framework for ferritin POCT in community pharmacy. Objectives included the identification and validation of in-vitro diagnostic test systems.

Method: Ferritin POCT options available locally and internationally were systematically appraised. Companies offering ferritin POCT (N=20) were contacted and devices were compared by sample type, time-to-result, analytical performance, result type, measurement range, technique, materials required, cost and availability. One device was selected and validated against laboratory-based ferritin testing in 20 patients. An implementation framework for pharmacist-led ferritin POCT was developed using an iterative, evidence-based process, informed by existing POCT service models, relevant guidelines and professional standards. Framework content and usability were reviewed by an interdisciplinary expert panel consisting of two community pharmacists, a hospital pharmacist, two general practitioners, an endocrinologist, and two lay persons. The framework was designed to support clinical appropriateness and patient identification, operational feasibility, quality assurance, documentation and referral pathways.

Results: Of the twenty companies contacted, eight did not reply. Twelve companies responded providing details for thirteen ferritin POCT. Of these devices, seven were ineligible including five due to shipping restrictions to Malta, and two required additional expensive equipment such as analysers and incubators for functioning, limiting feasibility in a community pharmacy setting. Six ferritin test devices remained. A rapid semi-quantitative ferritin POCT device was selected for use in this study on the basis that results were available in approximately five minutes and reported as three bands: <13 ng/mL, ≥13–≤30 ng/mL or >30 ng/mL, with overall accuracy 95%. Comparison with laboratory testing showed strong agreement with no statistically significant difference between methods (McNemar $\chi^2=0.00$, p=1.000). The framework comprises three integrated components: 1) a structured data collection sheet to capture patient history,

symptoms, relevant observations and clinical information, 2) a pharmacist action plan incorporating a patient information leaflet, results communication sheet with tailored advice and a physician referral note, 3) a standard operating procedure, detailing testing process, documentation and quality considerations to ensure consistent and safe service delivery.

Conclusion: This research delivers a pharmacist-led, adaptable implementation framework to translate ferritin POCT into a standardised community pharmacy service. The framework can support consistent triage, documentation, patient education and referral, strengthening pharmacist contribution to early identification, monitoring and follow-up of iron-related conditions.

A real-world observational study investigating the impact of non-prescription PDE5 inhibitors (PDE5i) on medical help-seeking for erectile dysfunction (ED) and co-morbidities

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Background: Erectile dysfunction (ED) is a sentinel marker for cardiometabolic conditions highlighting the importance of health screening for men experiencing ED symptoms. In the UK, phosphodiesterase type 5 inhibitors (PDE5Is) sildenafil and tadalafil are available for purchase in pharmacies as over the counter (OTC) treatments for ED meaning men might bypass medical consultations where important underlying conditions could be identified.

Objective: To assess whether availability of OTC PDE5Is might be associated with reduced healthcare engagement, consequently increasing the risk of delayed diagnosis of serious underlying conditions.

Method: A real-world, observational, cross-sectional study using an online survey in a sample of men living in the UK aged ≥18 years with self-reported (doctor or self-diagnosed) ED who use prescription or OTC PDE5Is. The survey was

conducted twice: in 2023 (Period 1) and around 12 months later (Period 2), each with independent samples.

Results: Period 1 included 956 (63.2%) OTC only users, 279 (18.4%) prescription only users, 154 (10.2%) who did not use PDE5Is. Period 2 included 800 (58.9%) OTC only users, 253 (18.8%) prescription only users, 103 (7.6%) who did not use PDE5Is. Amongst OTC only users the most frequent reason for seeking help from a pharmacist was because it was less embarrassing than talking to their doctor (66.7% (n=638) in Period 1; 72.6% (n=581) in Period 2, respectively). Across both time periods, most PDE5I users had seen a doctor in the 12 months preceding the study (Period 1: 86.5% OTC, 89.2% prescription users; Period 2: 81.0% of OTC, 81.6% prescription users). In Period 1, OTC and prescription users reported seeing a HCP (including a pharmacist) for any reason on average >5 times in the preceding 12 months (mean (SD) number of consultations: OTC users: 5.59 (5.92), prescription users: 6.89 (6.74)) and had a consultation with a doctor specifically to discuss ED on average twice in that interval (mean (SD) number of consultations for OTC users: 2.75 (3.68); prescription users: 2.81 (3.22)). In Period 2, OTC users reported more consultations than prescription users: OTC tadalafil users (mean (SD) number of consultations with any HCP: OTC tadalafil users: 5.03 (4.32); OTC sildenafil users: 3.51 (4.17); prescription users: 4.73 (5.16)). Multivariate analysis adjusting for potential confounding factors produced similar adjusted mean numbers of consultations in each study period. Only 1.3%-3.6% of OTC users across both periods were classified as potentially at risk of delayed diagnosis (no comorbidities, no recent health checks, and no doctor contact). Pharmacist counselling and official product information were key drivers prompting OTC users to seek recommended health checks. Untreated men with ED demonstrated the lowest healthcare engagement.

Conclusion: This large real-world study demonstrates that the availability of OTC PDE5Is with pharmacist counselling does not negatively interfere with healthcare engagement. Pharmacists play a key role in facilitating access to effective ED treatment, whilst encouraging appropriate medical follow-up. In contrast, untreated men with ED show consistently low engagement with healthcare and represent a priority for future public health initiatives. The pharmacy based OTC model effectively balances accessibility with appropriate clinical oversight.

Knowledge, practices and determinants of oral contraceptive use among women attending community pharmacies: A cross-sectional study in Morocco

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Background: Contraception is a fundamental component of reproductive health, and oral contraceptives (OCs) are among the most commonly used methods worldwide. Community pharmacists play a vital role in counselling, dispensing, and monitoring these medications to ensure safe and effective use. Despite their widespread use, women's knowledge, practices, and the factors influencing their choice of contraceptive method vary considerably. This study aimed to assess the prevalence, patterns of use, and determinants of oral contraceptive utilisation among women attending a community pharmacy.

Method: A cross-sectional descriptive study was conducted among 200 women visiting a community pharmacy. Data were collected using a structured questionnaire exploring contraceptive practices, duration of use, sources of supply, and factors influencing the selection and switching of contraceptive methods. Descriptive statistics were applied to calculate frequencies and proportions, providing an overview of usage patterns and determinants of choice.

Results: Of the 200 women included, 108 (54.3%) reported using oral contraceptives. Among these users, second-generation pills were the most common (63.5%), followed by third-generation pills (23%), fourth-generation pills (10.7%), and progestin-only pills (3.8%). No participants reported using first-generation pills. Most women (65%) obtained their contraceptives from community pharmacies, while 18% received them free of charge from public hospitals, 10% from midwives' offices, and 7% from private medical practices. Regarding duration of use, 48.15% of women had been using oral contraceptives for more than five years, 37.04% for less than five years, and 13.58% for only a few months. The main factors influencing contraceptive choice included social influence from relatives (33.2%), ease of use (21%), perceived effectiveness (17.5%), good tolerability (10.4%), medical advice (7.1%), and pharmacist counselling (6.4%). Additional considerations were reversibility (3.2%) and absence of a required medical procedure (1.2%). Reasons for switching contraceptive pills included weight gain (32.3%), melasma (20.7%), mental health concerns (15.5%), headaches and migraines (12.4%), and missed doses (10.1%). Less frequently cited reasons were medical contraindications (5.2%), cost (3.7%), and allergic reactions (0.5%).

Conclusion: Oral contraceptives are widely used among women attending community pharmacies, with second-

generation pills being predominant. Non-medical factors, particularly social influence, play a significant role in contraceptive choice, while adverse effects are the primary reason for switching methods. These findings highlight the essential role of community pharmacists in providing counselling, supporting adherence, and managing side effects. Targeted pharmacist-led educational interventions could enhance the safe and effective use of oral contraceptives and improve overall reproductive health outcomes.

Community pharmacist follow-up and health-related quality of life in ambulatory cancer care in Japan

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Background: In Japan, community pharmacists are expected to monitor patients between dispensings and communicate clinically relevant findings to hospitals. However, evidence linking this inter-visit workflow to patient-reported outcomes in ambulatory oncology remains limited, and international descriptions of this care model are scarce. We aimed to evaluate whether telephone-only follow-up and app-informed follow-up are associated with better health-related quality of life than usual care and to identify operational achievements as well as implementation priorities for a real-world pharmacy-led follow-up model.

Method: We conducted a multicentre observational cohort study in seven community pharmacies in Japan from 1 April 2023 to 31 March 2025. Patients receiving ambulatory anticancer therapy were categorised as usual care (n=874), telephone-only follow-up (n=398), or app-informed follow-up (n=228). Health-related quality of life was assessed at baseline and at weeks 4, 8 and 12 using the EuroQol 5-dimension 5-level utility index and a visual analogue scale. The primary endpoint was week-12 utility. We conducted analysis of covariance adjusted for baseline utility, age, sex, performance status, cancer type, regimen class, and pharmacy. We assessed longitudinal utility trajectories using a repeated-measures Gaussian generalised estimating equation model. In secondary analyses, we evaluated appropriate early clinical review using logistic regression and pharmacist-hospital management agreement with binomial generalised estimating equations and evaluable feedback contacts. In exploratory analyses, we compared cytotoxic and targeted therapy.

Results: Week-12 data were available for 1,352/1,500 patients (90.1%). Mean utility change from baseline was usual care -0.054, telephone-only follow-up -0.034, and app-informed follow-up -0.025. In adjusted analysis, week-12 utility was higher by 0.019 (95% confidence interval [CI]

0.016–0.023) with telephone-only follow-up and 0.029 (0.024–0.033) with app-informed follow-up versus usual care; week-12 visual analogue scale scores were also higher by 2.36 (95% CI 1.84–2.88) and 4.72 (4.07–5.37) points, respectively. Appropriate early clinical review occurred in 12.1% (usual care), 18.1% (telephone-only follow-up), and 20.2% (app-informed follow-up); adjusted odds ratios versus usual care were 1.63 (95% CI 1.16–2.27) for telephone-only follow-up and 1.86 (1.25–2.78) for app-informed follow-up. Among 1,755 evaluable feedback contacts, management agreement was 56.4% (usual care), 66.0% (telephone-only follow-up), and 70.4% (app-informed follow-up); generalised estimating equation odds ratios versus usual care were 1.47 (95% CI 1.17–1.86) for telephone-only follow-up and 1.79 (1.38–2.32) for app-informed follow-up. Cytotoxic therapy was associated with more grade 2 or worse adverse events than targeted therapy (76.6% vs. 66.0%; adjusted odds ratio 1.66, 95% CI 1.22–2.27).

Conclusion: Inter-visit community pharmacist follow-up was associated with better preservation of health-related quality of life, stronger pharmacist-hospital alignment, and more timely clinical review, with the app-informed model showing the strongest signal. The stepwise gradient across the three groups, together with persistence after adjustment for cancer type, regimen class, and pharmacy, suggests that the association is not explained solely by case-mix or site differences. A plausible mechanism is that app review before telephone contact helped pharmacists focus on evolving symptoms, prioritise escalation, and communicate more actionable recommendations to hospitals before quality of life deteriorated. The higher adverse-event burden with cytotoxic therapy further supports regimen-sensitive follow-up pathways.

Implementation of biological specimen management services in community pharmacy: A scoping review of service models and implementation strategies

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Background: Access to laboratory testing remains a persistent challenge across health systems, contributing to delays in diagnosis and suboptimal disease management. Community pharmacies are highly accessible healthcare settings and have increasingly been leveraged to expand testing access, particularly through point-of-care testing (POCT). However, services involving biological specimen management for off-site laboratory analysis—such as collection, handling, and transport—remain underexplored. This study aimed to map the global evidence describing specimen management activities in community pharmacy

and to identify implementation strategies used to support their uptake and integration.

Method: A scoping review was conducted in accordance with PRISMA-Sc guidelines. Searches of PubMed and EMBASE were performed from inception to January 2026. Studies were included if they described biological specimen management activities undertaken by community pharmacy staff, excluding POCT conducted entirely on-site. Data were extracted on study characteristics, specimen types, handling processes, and implementation strategies. Implementation strategies were deductively categorized using the Expert Recommendations for Implementing Change (ERIC) taxonomy.

Results: Preliminary results from 24 included studies published between 2002 and 2026, predominantly from Europe and North America, have been identified. Most studies appear to focus on screening applications, including colorectal cancer, hepatitis C, and sexually transmitted infections. Common specimen types include dried blood spots, stool samples, and swabs (predominantly buccal), reflecting diverse diagnostic pathways. Frequently reported pharmacy-based activities include specimen collection, receipt, and coordination of transport, with fewer studies explicitly describing storage or processing. Implementation strategies have been identified in 16 studies to date, most commonly involving demand generation and educational materials, followed by funding mechanisms and role revision. Additional strategies include data system integration, quality monitoring, and interprofessional collaboration. Programs range from small feasibility studies to large-scale initiatives involving tens of thousands of participants.

Conclusion: Community pharmacies appear capable of supporting a wide range of specimen-based laboratory testing pathways beyond POCT. Preliminary findings suggest that successful implementation requires coordinated, multi-component strategies integrating demand generation, infrastructure, and system-level supports. Final results will further refine these findings and inform the design and scale-up of pharmacy–laboratory integration models to improve access to diagnostic services.

Community pharmacists' use of digital technologies to enhance patient care: a cross-sectional study in Nigeria

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Background: Digital technologies are transforming healthcare delivery worldwide, yet little is known about how Community

Pharmacists across low- and middle-income countries (LMICs) currently use digital technologies (DHTs) to enhance patient care.

Objective: This study aimed to assess the extent, purpose, perceived benefits, barriers, and determinants of digital technologies adoption among Community Pharmacists in Nigeria.

Method: A cross-sectional survey was conducted among registered Community Pharmacists who attended the 44th Annual National Conference of the Association of Community Pharmacists of Nigeria, held in July 2025. A structured, self-administered, paper-based questionnaire was administered to 400 consenting participants via convenience sampling. Data were collected and analyzed using the R programming language.

Results: A total of 360 filled questionnaires were retrieved, representing a response rate of 90%. Overall, commercial digital technologies such as Point of Sale software were widely used (88.1%) compared to specialized digital health technologies, including Electronic Health Records (EHRs), telepharmacy, mobile health (mHealth) applications, and e-prescription software (51.4%). The Community Pharmacists primarily used digital technologies for inventory management (77.5%), with the majority reporting efficient data management (71.7%) and improved customer satisfaction (68.6%) as the primary benefits. However, their use of digital tools was limited by inadequate finances and infrastructure. Furthermore, geographic settlement, patients' digital literacy level, and pharmacy ownership type did not significantly determine the use of DHTs ($p > 0.05$). In contrast, participants' geopolitical zones played a significant role in the use of DHTs ($p < 0.05$).

Conclusion: Despite the high adoption of digital technologies in the Nigerian community pharmacy practice, the use of specialized DHTs remains limited and uneven across regions, due to inadequate finances, infrastructure, and technical capacity. These challenges are systemic and continue to hinder the comprehensive integration of DHTs into community pharmacies and the broader health sector. CPs' readiness to adopt specialized DHTs and the global interest in telepharmacy practice position CPs as avenues for driving change in digital healthcare delivery and present a strategic opportunity for policymakers, regulatory authorities, and professional bodies to accelerate the integration of DHTs into community pharmacy practice.

Effectiveness of virtual reality interventions in improving clinical outcomes among adults with type 2 diabetes mellitus: A systematic review

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Background: Diabetes mellitus affects over 400 million people globally, with type 2 diabetes mellitus (T2DM) representing the predominant form. Sustained self-management—encompassing medication adherence, glycaemic monitoring, and physical activity—remains a significant challenge. Virtual reality (VR), characterised by immersive, interactive digital environments, has emerged as a promising tool for supporting behavioural change in chronic disease management. Despite growing interest in VR across healthcare, its effectiveness in improving clinical and behavioural outcomes in T2DM remains underexplored. This systematic review aimed to evaluate the effectiveness of VR-based interventions on medication adherence, glycaemic control, and related outcomes in adults with T2DM.

Method: A systematic search was conducted across PubMed, Web of Science, Scopus, and Embase, covering publications from January 2015 to February 2025. Medical Subject Headings (MeSH) terms and free-text keywords pertaining to diabetes, VR, medication adherence, and glycated haemoglobin (HbA1c) were combined using Boolean operators. Studies were eligible if they involved adults aged 18 years or older with confirmed T2DM, evaluated a VR or immersive digital intervention, and reported at least one clinical or behavioural outcome. Excluded were studies involving paediatric, elderly, or gestational diabetic populations, non-English publications, reviews, and case reports. Study selection followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines. Risk of bias was assessed using the Cochrane Risk of Bias 2.0 (RoB 2.0) tool for randomised controlled trials (RCTs), the Risk Of Bias In Non-randomised Studies of Interventions (ROBINS-I) tool for quasi-experimental studies, and National Institutes of Health (NIH) quality assessment tools for observational and pre-post designs. The review was registered in PROSPERO (CRD42025636371).

Results: Eight studies encompassing 1,378 participants met the inclusion criteria. VR modalities included avatar-based virtual environments, smartphone-mounted head-mounted displays (HMDs), virtual coaching platforms, virtual assistants, and gamified mobile applications. HbA1c was reported in seven of eight studies, with reductions observed in all seven; participants with elevated baseline HbA1c (greater than 9.0%) experienced the most pronounced reductions, reaching up to 2.4%. Physical activity improved in four studies, particularly those incorporating gamification or immersive exercise features. Medication adherence was assessed in three studies, with two reporting improvements through virtual assistant or clinic-based platforms. Additional benefits

included reductions in body weight, blood pressure (BP), and lipid profiles. Interventions incorporating gamification, personalised coaching, and interactive engagement consistently demonstrated the most favourable outcomes across clinical domains.

Conclusion: VR-based interventions show considerable promise for improving clinical and behavioural outcomes in adults with T2DM, particularly for glycaemic control and physical activity. Immersive, gamified, and coaching-integrated platforms appear most effective, especially in individuals with suboptimal baseline glycaemic control. However, the evidence base is constrained by methodological heterogeneity, small sample sizes, and limited long-term follow-up. Medication adherence remains underexplored in VR research and warrants targeted investigation. High-quality, longitudinal RCTs are needed to validate the scalability, sustainability, and equitable implementation of VR interventions in diabetes pharmacy practice.

From screening to prescribing: Implementing ELOPE CVD lipid point-of-care testing to optimise lipid-lowering therapy in community pharmacy

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Background: Cardiovascular disease (CVD) remains a leading cause of premature deaths in England, disproportionately driven by people living in more deprived areas. People with high cholesterol who also have other risk factors (e.g. high blood pressure, diabetes, smoking) are at significantly greater risk of CVD, commonly asymptomatic, and undetected. The ELOPE CVD lipid point of care testing (PoCT) service, developed by East London Prevention (ELOPE) group, aims to support earlier identification of cardiovascular risk through community pharmacy-based lipid testing and QRISK3 assessment.

Objective: To evaluate community pharmacies delivering cardiovascular risk assessments using lipid PoCT, with a focus on identifying people at increased CVD risk within

underserved communities, and enabling timely referral and intervention.

Method: Selected pharmacies in England, in areas with highest levels of deprivation, were equipped with Afinion 2 lipid PoCT lipid analysers integrated with HealthTab digital clinical decision support technology between 1st Jan 2025 to 15th Feb 2026. Trained pharmacy professionals conducted lipid PoCT and calculated CVD risk using QRISK3 in adults (over 25 years) without established CVD and not taking any form of lipid lowering therapy. Patient demographics, Index of Multiple Deprivation (IMD) ethnicity and co-morbidities were collected. Feedback from users was captured. Results were shared with GPs and accessible via the NHS App. Sixteen pharmacies were part of the independent prescribing (IP) pathfinder pilot enabling prescribing of lipid lowering therapy at the pharmacy, where indicated.

Results: A total of 1366 people received a CVD risk assessment conducted across 20 pharmacies in England. Mean age was 49 years; 478 (35%) were male; 441 (32%) lived in the 20% most deprived areas and 764 (56%) were from global majority ethnicities. 234 (17%) people had a QRISK3 of 10% or more and were considered for statin initiation. Of these individuals, 77 (33%) were from 20% most deprived areas (CORE20 population) and 118 (50%) were from global majority ethnicities. Of the 79 type 2 diabetic people tested, 40 (51%) people had a QRISK of 10% or more. An additional 26 individuals were referred to GPs for hypercholesterolemia. At the time of analysis, 55 people have been initiated on statins. Of the 169 people who responded to the user survey, 98% rated their experience as 'excellent' or 'Good', highlighting convenience and accessibility. One respondent stated, 'the time saved is invaluable'.

Conclusion: Community pharmacy-based lipid PoCT services identifies individuals at increased CVD risk, particularly within underserved populations reducing health inequalities. The ELOPE CVD service demonstrates the potential for pharmacies to support earlier detection, reduce delays in clinical decision-making and facilitate timely initiation of preventive therapy. People were positive in their experience of this service further supporting the potential for Pharmacy-based screening as a scalable opportunity to reduce health inequalities and expand primary care capacity.

Identification of Undiagnosed Dysglycaemia Using HbA1c Point-of-Care Testing within the East London Cardiovascular Disease Prevention (ELOPE) Community Pharmacy Pathway

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Background: Type 2 diabetes and cardiovascular disease share common risk factors and disproportionately affect individuals living in deprived communities and certain ethnic minority groups. Many individuals remain undiagnosed until complications develop. Community pharmacies are accessible healthcare settings that may support earlier identification of cardiometabolic risk. The East London Cardiovascular Disease Prevention (ELOPE) group developed a community pharmacy point-of-care testing pathway integrating cardiovascular risk assessment and disease risk stratification to support earlier identification of cardiometabolic risk. HbA1c point-of-care testing was introduced within this pathway to explore the feasibility of identifying previously undiagnosed dysglycaemia.

Objective: To evaluate early implementation of HbA1c point-of-care testing within the ELOPE community pharmacy pathway and assess its ability to identify individuals with previously unrecognised pre-diabetes or diabetes.

Method: Community pharmacies delivering the ELOPE pathway conducted opportunistic HbA1c testing alongside cardiovascular risk assessments across selected pharmacies across East London, in areas with highest levels of deprivation. All pharmacies were equipped with Afinion 2 lipid PoCT lipid analysers integrated with HealthTab digital clinical decision support technology. Trained pharmacy professionals conducted HbA1c PoCT and calculated QDiabetes score (an estimate of an individual's likelihood of developing type 2 diabetes over the subsequent 10 years) in adults (over 25 years) without established CVD nor diabetes. Demographic data including age, sex, ethnicity and body mass index were recorded. HbA1c values of 42–47 mmol/mol were classified as pre-diabetes and values ≥ 48 mmol/mol as possible diabetes requiring confirmatory testing. Results were shared with GPs and accessible via the NHS App.

Results: Within the first three weeks of implementation, 704 individuals underwent HbA1c testing from 34 pharmacies. Dysglycaemia was identified in 66 individuals (9.4%), including 55 with pre-diabetes and eleven with HbA1c ≥ 48 mmol/mol suggestive of diabetes. The highest HbA1c value recorded was 120 mmol/mol with 4 individuals having HbA1c > 68 mmol/mol, requiring urgent escalation. Among individuals with HbA1c < 48 mmol/mol, the mean QDiabetes score indicating 10-year risk of developing diabetes was 8%. One in 5 individuals had a QDiabetes score $> 10\%$, and 1 in 10 having a score $> 20\%$. Thirty-seven percent of individuals tested were from the most deprived areas (Core20 population group). Thirty-six percent were of South Asian ethnicity, with the largest subgroup being Bangladeshi (20%) followed by Indian (10%). The mean age was 44 years (range 24–84), mean body mass index was 27.8 kg/m², and 64% were female. Targeting testing using the Diabetes UK “Know Your Risk” score (a validated population-based risk assessment tool that estimates an individual's likelihood of developing type 2 diabetes based on demographic and lifestyle factors) increased the detection rate of dysglycaemia to approximately 25% among individuals classified as high or very high risk.

Conclusion: Early findings suggest that HbA1c point-of-care testing delivered within the ELOPE community pharmacy cardiovascular screening pathway can identify individuals with previously undiagnosed dysglycaemia, particularly among underserved populations. Integrating diabetes detection within a broader cardiometabolic PoCT pathway may support earlier diagnosis and more efficient targeting of diagnostic testing.

Can pharmacist change patient behavior? Evidence from community pharmacies in Kosovo

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Background: Inappropriate use of antibiotics is a major driver of Antimicrobial Resistance*, posing a serious threat to global public health. In Kosovo, community pharmacies often serve as the first point of contact for patients, placing pharmacists in a key position to influence antibiotic use. However, data on real-world practices and patient-pharmacist interactions remain limited.

Purpose of this study aimed to assess antibiotic-related patient interactions in community pharmacies in Kosovo and to evaluate the effectiveness of pharmacists in promoting rational antibiotic use.

Method: A cross-sectional study was conducted in 80 community pharmacies, representing approximately 10% of

all community pharmacies in Kosovo. Data were collected from 800 patient interactions using a structured approach. The study assessed patient requests for antibiotics, pharmacist interventions, and outcomes of these interactions. Descriptive statistical analysis was performed.

Results: Results showed that in 43% of cases, pharmacists successfully convinced patients to consult a physician and undergo an antibiogram before antibiotic use. In 31% of cases, patients were persuaded not to take antibiotics without a prescription. However, 12% of patients still obtained antibiotics without prescription. The remaining proportion reported seeking additional advice from another pharmacist.

Conclusion: Community pharmacists in Kosovo play a significant role in influencing patient behavior regarding antibiotic use. While a substantial proportion of patients respond positively to pharmacist interventions, inappropriate antibiotic use persists. Strengthening regulatory enforcement, improving patient education, and empowering pharmacists through continued professional development are essential to enhance antibiotic stewardship and address antimicrobial resistance in line with the One Health approach.

* Kosovo is among the leading countries in Europe in terms of ceftriaxone use, with the highest proportion parenteral consumption reporter.

Acute Cough: A Prospective Observational Evaluation of Symptom Relief and Time to Recovery With the Mucoactive Treatments Ambroxol and Bromhexine in Adults (CO-PRESTO)

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Background: Acute chesty cough associated with common cold can impair sleep, daily activities, social participation, and quality of life (QoL) leading patients to seek over-the-counter treatments for rapid relief. Evidence on mucoactives is outdated and mainly focused on chronic cough, offering limited insights into patient-centric endpoints in acute episodes of chesty cough. Real-world data on pharmacist-led management is even scarcer, although pharmacists rely on such data to recommend treatments and advise on symptom duration and relief. This study used patient-reported outcomes to assess real-world effectiveness of ambroxol and

bromhexine, and their impact on daily life, in patients with acute chesty cough in Italy.

Method: This prospective observational study enrolled adults in Italy with active acute chesty cough for ≤ 72 hours who had purchased ambroxol 15 mg/5 mL (Mucosolvan®) or bromhexine 8 mg/5 mL (Bisolvon®). Participants completed daily online questionnaires from day 1 to 7. The primary endpoint was change from baseline in Cough Severity Diary (CSD) total score and frequency, intensity and disruption subdomains. Meaningful improvement was defined as a ≥ 1.3 -point reduction in CSD total score. Secondary endpoints included Leicester Cough Questionnaire (LCQ) total and domain scores, sleep quality, sleep disturbance, wellbeing and daily-life impact. Exploratory endpoints assessed immediate perceived benefit after first intake.

Results: Overall, 303 participants completed Day 7 and were analysed (bromhexine, n=153; ambroxol, n=150). CSD total score and the frequency, intensity, and disruption subdomains improved significantly within 24 h in both groups (all $p < 0.001$). By 48 h, mean CSD total score decreased from 7.97 ± 1.36 to 6.09 ± 1.70 with bromhexine and from 8.17 ± 1.41 to 6.28 ± 1.70 with ambroxol, exceeding the meaningful improvement threshold. By Day 7, 99% (bromhexine) and 100% (ambroxol) of participants achieved meaningful improvement. LCQ total score and physical, psychological and social domains improved significantly within 24 h in both groups (all $p < 0.001$). After 48 h, LCQ total score increased from 9.33 ± 2.44 to 11.81 ± 2.45 with bromhexine and from 9.27 ± 2.34 to 11.88 ± 2.57 with ambroxol. Sleep quality, ability to stay asleep, and tiredness scores improved significantly within 24 h in both groups. By 48 h, percentage of patients with difficulty falling asleep, staying asleep and sleep-related tiredness decreased by 59%, 56% and 55%, respectively. Night-time awakenings decreased from 5.03 to 0.61 with bromhexine and from 4.85 to 0.59 with ambroxol by Day 7. Sleep improvements were accompanied by early gains in daily functioning. By 72 h, proportions reporting reduced concentration, productivity and energy decreased by 62%, 60% and 54% with bromhexine, and by 58%, 62% and 55% with ambroxol, respectively. After first intake, 53% of bromhexine users and 41% of ambroxol users agreed/strongly agreed they felt immediately relieved, and 57% and 44%, respectively, reported relief from the urge to cough.

Conclusion: In this real-world Italian study, bromhexine and ambroxol were associated with immediate perceived benefit after first intake, significant cough-severity improvement within 24 hours and meaningful improvement in most participants by 48 hours. Benefits extended beyond cough severity to QoL and sleep, supporting pharmacists in counselling patients seeking rapid, sustained relief and broader self-medication recovery from acute chesty cough.

Funding: This study was funded by Opella.

Consumer perspectives on acute chesty cough management - Implications for pharmacy practice

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Background: Acute chesty cough significantly impacts patients' quality of life and drives healthcare utilization. Community pharmacists serve as frontline healthcare providers guiding appropriate over-the-counter (OTC) therapy selection and self-management strategies; yet consumer perspectives on symptom experience, treatment patterns, and OTC medication use in real-world settings remain poorly understood. This qualitative study investigated consumer perceptions, behaviours, and OTC treatment patterns in acute chesty cough management in real-world settings to inform evidence-based pharmaceutical care strategies.

Method: A qualitative research design employing semi-structured in-depth interviews was conducted in Germany and Italy from January-February 2025. Forty-five adults (aged 23–68 years) experiencing acute chesty cough episode(s) (3 days–3 weeks duration) within the previous two weeks were recruited via social media. Participants were stratified by OTC medication behaviour as non-users (n=14), casual users (n=15), and proactive users (n=16). Interviews lasted approximately 60 minutes and responses were analyzed using MaxQDA software for thematic analysis; the recorded responses were not mutually exclusive.

Results: Acute chesty cough significantly disrupted daily functioning, with sleep disturbance emerging as the primary severity indicator. Work productivity was impacted in 19 participants, including difficulty speaking during meetings (n=9) and mask-wearing to prevent transmission (n=5). Social withdrawal was common (n=19), manifesting as cancelled plans (n=8) and staying at home (n=8). Among OTC users (n=31), commonly used products included levodropropizine (n=7) in Italy, acetylcysteine (n=5) in German, and various expectorants. Healthcare professional recommendation was the primary driver for product selection (n=11), particularly more prevalent among Italian than German participants (n=8 vs n=3). Proactive users initiated treatment notably earlier than casual users, with 8 of 14 beginning therapy within two days compared to only 1 of 13 casual users. OTC users reported high treatment satisfaction (mean 7.3 on scale of 10), with 22 of 30 participants experiencing effective symptom relief. Primary benefits included improved mucus expectoration, and reduced frequency and urge to cough reported by 13 and 12 of 27 participants, respectively. Fifty percent of the participants reported no major drawbacks;

taste/product characteristics (n=7) and side effects (n=3) were among few effects reported. While 11 participants believed earlier treatment initiation would not have significantly altered outcomes, 13 anticipated that delaying treatment would prolong cough duration, and 9 expected symptom worsening.

Conclusion: This study highlights key implications for pharmacy-based acute chesty cough management: (1) tailoring dosage and timing advice to user type, with proactive users benefitting from early intervention and casual users requiring education on optimal timing; (2) symptom-specific product recommendation distinguishing expectorants from suppressants; (3) sleep disturbance assessment as a critical severity indicator to guide treatment escalation; and (4) cultural considerations in perceptions and behaviours, with Italian consumers showing greater reliance on professional recommendations. Pharmacists are encouraged to implement structured assessment tools to identify patient treatment patterns, provide targeted education on optimal treatment timing and manage effectiveness expectations of consumers, alongside symptom-specific treatment recommendations. As accessible and trusted healthcare partners, pharmacists are positioned to support consumers through acute chesty cough self-management, especially where cultural context shapes how patients seek professional support.

This study was funded by Opella.

Strengthening proximity in the Portuguese pharmacy network: Key insights from the 2025 “Every Pharmacy Matters” program

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Background: Community pharmacies play a central role in ensuring equitable access to healthcare, particularly in territorially diverse and ageing societies. In Portugal, strengthening the sustainability and resilience of the pharmacy network requires continuous professional empowerment, effective governance, and proximity-based organizational models. The Every Pharmacy Matters Program (Programa Todas as Farmácias Contam – PTFC), launched by the Portuguese National Association of Pharmacies (ANF) in 2022, has become a strategic mechanism to operationalize these priorities by strengthening the associative bond

between ANF, its elected associative structure and affiliated pharmacies.

Objective: The 2025 edition of the Every Pharmacy Matters Program has four strategic objectives: (i) strengthening proximity by promoting active engagement, information exchange and a shared sense of belonging among ANF members; (ii) fostering territorial cohesion through policies and initiatives aimed at reducing regional inequalities and promoting balanced development across all areas of ANF's activity; (iii) maintaining and reinforcing ANF membership, ensuring representativity, institutional influence and long term organizational sustainability; and (iv) decentralizing initiatives, guaranteeing equal access to resources and opportunities across all regions and reinforcing a cohesive national pharmacy network.

Method: In 2025, due to ANF's 50th anniversary, the program included decentralized conferences. It also incorporated focus group meetings on territorial cohesion and field visits by internal ANF teams to pharmacies. These activities complemented the regular meetings with the President of the Board of ANF, thematic sessions, visits by Board members to pharmacies across the country, and statutory assemblies. A mixed methods approach was used, combining quantitative and qualitative indicators. Program impact was assessed through: (i) the number and territorial distribution of participating pharmacies; (ii) engagement across different initiative formats and (iii) the Proximity Index, measured using a Likert-scale survey (scale from 1 to 5) assessing perceived closeness between pharmacies and ANF.

Results: In 2025, the PTFC engaged 1,481 pharmacies, representing 54% of the Portuguese community pharmacy network. The Proximity Index reached a mean value of 4.25 (scale from 1 to 5), the highest since the program's inception. Initiatives ensured broad territorial coverage, including low density and remote areas, and strengthened professional skills, institutional trust, and collaborative governance through hybrid and digitally supported formats.

Conclusion: The 2025 Every Pharmacy Matters Program demonstrates that proximity centered, professionally empowering and organizationally innovative strategies can catalyze change, contributing to a more resilient, cohesive and future ready community pharmacy network.

Community pharmacies as research hubs: Lessons from the Cientis – AstraZeneca Partnership

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Background: Community pharmacies have a unique position in healthcare, providing access to large patient populations and opportunities for real-world evidence generation. Structured interventions embedded in routine practice enable pharmacies to contribute to understanding chronic disease management, therapeutic adherence, and patient education. The Cientis–AstraZeneca partnership was established to explore the potential of community pharmacies as research hubs. This abstract summarises studies conducted within this partnership, highlighting the feasibility, reach, and scientific contribution of pharmacy-based research.

Method: Data were aggregated from multiple studies conducted in Portuguese community pharmacies as part of the Cientis–AstraZeneca partnership during 2025, with some initiatives extending into 2026. These studies evaluated the feasibility of implementing structured research protocols in routine pharmacy practice while generating real-world evidence across chronic conditions, including respiratory, cardiovascular-renal-metabolic (CVRM), and autoimmune diseases. Pharmacists implemented standardized procedures integrated into routine care, enabling structured data collection in real-world settings. The Chronic Diseases from A to Z Programme (COPD and CVRM branches) included a cross-sectional baseline assessment and a longitudinal pharmacist-led intervention. The COPD branch focused on improving disease awareness, treatment adherence, and symptom monitoring, while the CVRM branch targeted patients at risk of, or with established, cardiovascular, renal, or metabolic disease. The TRANSFORM study was a cross-sectional observational study in patients with systemic lupus erythematosus (SLE), characterizing patient profiles, treatment patterns, and oral corticosteroid use. Both the Chronic Diseases from A to Z Programme and the TRANSFORM study were approved by the relevant ethics committees. The Dapagliflozin Prescription Monitoring study

was a repeated cross-sectional survey describing real-world prescribing patterns, indications, and patient characteristics and was conducted as a market research study.

Results: Across all studies conducted in 2025, recruitment is expected to exceed 900 patients. The Chronic Diseases from A to Z Programme is ongoing and is projected to include approximately 300 participants in each branch. In addition, the TRANSFORM study recruited 339 patients with SLE across participating pharmacies. Within the Chronic Diseases from A to Z Programme, pharmacists identified patients with suboptimal disease control, medication-related problems, and gaps in disease awareness. Pharmacist-led interventions focused on improving medication adherence, reinforcing recognition of warning symptoms, optimizing disease management, and facilitating referral to physicians when appropriate. The TRANSFORM study provided real-world insights into treatment patterns in SLE, revealing patterns of oral corticosteroids use and identifying opportunities for optimizing treatment management. Additionally, the Dapagliflozin study collected more than 3,000 questionnaires across three data collection phases during 2025, generating large-scale real-world data. Overall, approximately 594 community pharmacies across Portugal participated in these initiatives, demonstrating the nationwide reach and feasibility of pharmacy-based research in routine practice.

Conclusion: These initiatives demonstrate that community pharmacies can function as effective research hubs recruiting large patient populations, implementing standardized study protocols, and generating real-world evidence across chronic conditions. Pharmacist-led interventions improve patient understanding while providing insights into patient populations and treatment use. Partnerships such as the Cientis–AstraZeneca collaboration illustrate how community pharmacy networks contribute to evidence generation and healthcare innovation, representing a scalable model for future research.

From awareness to action: A community pharmacy programme to promote health literacy and early detection of chronic kidney disease

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Background: Cardiorenal–metabolic (CRM) diseases — including cardiovascular disease, diabetes mellitus and chronic kidney disease (CKD) — represent a major global health challenge due to their shared risk factors and high burden of morbidity and mortality. CKD frequently progresses silently and remains underdiagnosed until advanced stages. Community pharmacists are well positioned to contribute to health literacy, prevention and early risk identification due to their accessibility and frequent contact with patients. However, structured training and practical tools are often required to support pharmacists in addressing CRM-related risks in routine practice. This programme aimed to implement and evaluate an integrated community pharmacy initiative combining knowledge assessment, technical–scientific training and a patient-facing intervention to strengthen pharmacists' capacity to promote kidney health awareness and early identification of CKD risk.

Method: A multi-component programme was implemented in Portugal targeting community pharmacies. The initiative comprised three complementary components: (1) an initial assessment of pharmacists' knowledge regarding CRM diseases; (2) a technical–scientific training phase including a live educational webinar and a practical guidance document addressing CRM interconnections and CRM risk awareness; and (3) a community pharmacy intervention focused on kidney health awareness. During the intervention, pharmacists applied a brief structured questionnaire at the pharmacy counter to adults with hypertension and/or diabetes and no known diagnosis of CKD, promoting awareness of kidney health and encouraging early detection behaviours. The programme was structured into independent components, allowing pharmacies to participate voluntarily and flexibly across the different stages according to their availability and interest.

Results: A total of 128 pharmacists completed the baseline knowledge assessment (T0) and 123 completed the post-

training assessment (T1). At baseline, 77.3% of participants reported not having previously received structured training on CRM diseases, highlighting a clear educational gap. Following the training phase, improvements were observed in both objective and self-perceived knowledge scores. The mean number of correct responses increased from 7.4/9 at T0 to 7.7/9 at T1. Self-assessed knowledge regarding CRM diseases increased from 2.8/5 to 3.5/5, while confidence in identifying and counselling individuals at risk increased from 3.0/5 to 3.7/5. A total of 108 pharmacies implemented the patient-facing intervention, reaching 410 individuals within three consecutive days. Participating pharmacies represented all mainland Portuguese districts, demonstrating broad national coverage. Most individuals were aged 65 years or older (69.3%), consistent with the epidemiological profile of patients with hypertension and diabetes commonly encountered in community pharmacies, and the majority did not present additional risk factors for kidney disease. The intervention was reported as feasible to integrate into routine practice and overall feedback from pharmacists was positive. Some pharmacies also reported continuing to promote kidney health awareness beyond the formal intervention period.

Conclusion: This initiative demonstrates that structured programmes combining pharmacist education and simple patient-facing interventions can support community pharmacies in promoting health literacy and early risk awareness of CKD within the broader CRM framework. Collaborative programmes involving community pharmacies and other healthcare stakeholders may represent scalable approaches to strengthen the role of community pharmacists in chronic disease prevention and early detection.

Access to ACE inhibitors in Kosovo: The role of pharmacists in rational use and generic-brand selection

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Background: Hypertension remains a major contributor to cardiovascular disease and requires long-term, consistent treatment. In Kosovo, access to medicines depends heavily on imports and the authorization process of the Kosovo Medicines Agency (KMA). Angiotensin-converting enzyme (ACE) inhibitors, including enalapril, lisinopril, and ramipril, are commonly used in hypertension treatment. Nevertheless, the lack of a functional reimbursement system means that patients mostly pay for medicines out of pocket. In this situation, besides price and availability, pharmaceutical marketing has a stronger influence on prescribing habits and the choice between brand-name and generic products.

Objective: This study explores how accessible ACE inhibitors are in Kosovo and examines the everyday role of pharmacists in promoting rational use, especially when patients are choosing between originator and generic medicines.

Method: A descriptive, practice-oriented approach was used. Publicly available information on registered ACE inhibitors at KMA was combined with observations from community pharmacy practice. The study looked at how therapy is typically initiated by specialists and how medicines are selected and dispensed at the community pharmacies. Specific attention was given to elements that form decisions between generic and brand-name options, such as price, availability, patient expectations and the impact of promotion.

Results: Multiple ACE inhibitors are registered and available in Kosovo. While specialists usually initiate therapy, pharmacists become the main point of contact for patients during long-term treatment. Out-of-pocket payments account for over 50% of total health expenditure, with medicines representing the largest share, making affordability a key determinant of patient choice. Generic ACE inhibitors are often selected due to their lower cost. However, some prescribing decisions and patient preferences are influenced by brand familiarity or marketing efforts, especially in the absence of reimbursement policies that would normally guide more cost-effective use. Pharmacists regularly assist patients by explaining therapeutic equivalence, addressing doubts about generic substitution, and supporting adherence.

Conclusion: Access to antihypertensive medicines in Kosovo is shaped largely by cost and by the absence of reimbursement mechanisms, while brand recognition and marketing can influence both prescribers and patients. Pharmacists play a key role in guiding rational medicine use and helping patients make informed choices between originator and generic products. Better coordination among healthcare providers and policy-makers, together with the introduction of reimbursement strategies, could improve prescribing practices and long-term treatment outcomes. Further studies using quantitative data on utilization and adherence would provide a clearer picture of treatment patterns.

From documentation to clinical impact: Medication therapy management tools across 15 health systems

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Background: Medication Therapy Management (MTM) has demonstrated measurable clinical impact in some advanced health systems, but less is known about the structural conditions that enable MTM tools to support meaningful pharmacist-led care rather than documentation alone. This issue is particularly relevant in Southeast Asia, where interest in MTM is growing but implementation in community pharmacy remains variable.

Objective: To compare MTM tools across 15 health systems, identify the structural factors associated with clinical integrated pharmacist-led care practice, and derive a context-adapted implementation implications for Indonesia and Southeast Asia.

Method: A scoping review was conducted using policy documents, peer-reviewed literature, and publications from professional organisations across 15 health systems: the United States, Canada, United Kingdom, Australia, Japan, Malaysia, Singapore, Thailand, South Korea, China, Hong Kong, Taiwan, India, the Philippines, and Indonesia. MTM Tools were classified according to clinical function rather than terminology. Comparative analysis focused on four structural domains: information flow, service trigger design, clinical authority, and payment visibility.

Results: Five functional elements were consistently identified across more developed MTM models: a unified medication list, a structured assessment framework, a patient-facing action plan, an interprofessional communication channel, and a clinical documentation or follow-up record. Four structural factors appeared to distinguish more clinically integrated systems from less developed models: dynamic versus isolated information flow; protocol-driven versus opportunistic service triggers; binding versus advisory clinical authority, and explicit versus bundled payment recognition. Systems showing stronger alignment across these domains demonstrated better integration of MTM into routine patient care. Technology functioned mainly as an enabling condition rather than the primary determinant of successful implementation. Cross-system timeline analysis suggested

that formal recognition and reimbursement often followed prolonged periods of locally supported or unfunded advanced practice rather than preceding it. Comparison with the Indonesian context suggested important gaps across all four structural domains.

Conclusion: MTM tools alone are unlikely to produce meaningful clinical impact unless supported by appropriate information access, service design, professional authority, and payment mechanism. For Indonesia and other South East Asian settings, implementation may be strengthened through staged development of standardised patient medication records, protocols for high-burden chronic diseases, outcome documentation relevant to payers, and stronger pharmacist integration within interprofessional primary care teams.

Dispensing hospital medicines in community pharmacies in Portugal: Implementation overview, barriers and opportunities

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Background: In Portugal, hospital medicines have traditionally been dispensed exclusively through hospital pharmacies, which may create access barriers for patients requiring long-term therapies. Based on evidence from pilot initiatives conducted before and after the COVID-19 pandemic—namely TARV, Farma2Care and Operação Luz Verde—the dispensing of hospital medicines through community pharmacies was formally integrated into national legislation in December 2023. This service allows participating community pharmacies to dispense selected hospital medicines for treatment periods of up to 60 days. This study aims to provide an overview of the implementation of this model and to explore key barriers and opportunities associated with the integration of hospital medicine dispensing in community pharmacies.

Method: Hospital medicines are centrally stored at the SUCH warehouse and distributed to pharmaceutical wholesalers, ensuring delivery to community pharmacies close to the expected dispensing date. A descriptive analysis of the SUCH delivery plan between January 2025 and February 2026 was performed. As scheduled deliveries do not always correspond to completed dispensings, the number of dispensings, patients and participating pharmacies were estimated through extrapolation from delivery data. Implementation barriers were identified through ongoing stakeholder engagement, including coordination meetings with participating institutions and operational feedback collected from community pharmacies.

Results: The service was initially implemented in eight Local Health Units (ULS) and progressively expanded to 15 ULS, representing 38% of the national total. A total of 2,500 community pharmacies are enrolled in the programme, with 1,380 patients receiving hospital medicines across 628 pharmacies. The most frequently dispensed medicines were adalimumab and anastrozole. Stakeholder feedback and implementation monitoring identified several barriers, including technological integration between hospital and community pharmacy information systems, logistical coordination among multiple stakeholders and organisational challenges related to service adoption.

Conclusion: Despite these barriers, the model presents significant opportunities to enhance patient access to hospital medicines while leveraging the accessibility and geographical coverage of community pharmacies. Future developments include expansion to additional health units, broader therapeutic coverage and improvements in digital interoperability and supply chain coordination. The Portuguese experience highlights the potential of community pharmacies to support more patient-centred models of hospital medicine dispensing and may provide valuable insights for other healthcare systems exploring proximity-based access to hospital therapies.

Cardiovascular risk assessment in community pharmacy: Prevalence of risk factors and uncontrolled cardiovascular disease

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Background: Cardiovascular diseases remain the leading cause of mortality worldwide and in Portugal. Early identification of risk factors and appropriate control of associated conditions are essential to reduce cardiovascular morbidity and mortality. With the introduction of the new global cardiovascular risk assessment charts (SCORE2 and SCORE2-OP), Portugal, previously considered a low cardiovascular risk country, is now classified as a moderate cardiovascular risk country. In this context, cardiovascular risk assessment plays a crucial role in the prevention of cardiovascular disease. Due to their accessibility and proximity to the population, community pharmacies are well positioned to promote health literacy and contribute to the early identification of individuals with cardiovascular risk factors.

Objective: To assess cardiovascular risk among community pharmacy users, including individuals without a previous diagnosis but presenting risk factors, patients with associated

comorbidities, and individuals with diagnosed but uncontrolled cardiovascular disease.

Method: The study was conducted during May 2025 and involved two main interventions in community pharmacy. The first intervention focused on promoting health literacy among patients with cardiovascular disease. The second involved cardiovascular assessment and the application of a structured questionnaire to collect information on cardiovascular risk factors, clinical history and lifestyle behaviours. Cardiovascular risk stratification was performed using the SCORE2 and SCORE2-OP charts. Data were collected through a digital form (Formsapp®) and analysed using Microsoft Excel®.

Results: The initiative involved 4,151 participants, of whom 69% were female, with the most represented age group being 60–75 years (56%). Regarding cardiovascular risk factors, 15% of participants were smokers, 39% reported not engaging in regular physical activity, and 60% presented overweight or obesity. Additionally, 52% reported a family history of cardiovascular disease, and 63% classified their stress levels as moderate to high, indicating a high burden of cardiovascular risk factors in this population. Regarding clinical history, 62% of participants had a previous diagnosis of cardiovascular disease. Among individuals without a previous diagnosis, several risk factors were identified: 46% reported a family history of cardiovascular disease, 39% presented overweight or obesity, and 50% were smokers. Cardiovascular risk stratification using SCORE2 and SCORE2-OP showed that 3% presented high risk and 26% moderate risk of developing a fatal or non-fatal cardiovascular event within the next 10 years. Additionally, 27% of individuals classified as high risk and 53% of those classified as moderate risk presented three associated comorbidities, highlighting an accumulated risk profile. Important gaps in disease control were also identified: 32% of patients had uncontrolled hypertension, 54% had uncontrolled hypercholesterolaemia, and 25% presented uncontrolled dyslipidaemia. Based on the assessment performed, 27% of participants were referred for medical evaluation, allowing optimisation of clinical follow-up and management of cardiovascular risk factors.

Conclusion: Pharmacists are well positioned to contribute to the reduction of cardiovascular risk factors through pharmaceutical care provided in community pharmacies. Cardiovascular risk assessment, combined with the identification of uncontrolled disease and referral for medical evaluation when necessary, supports preventive strategies and patient follow-up, reinforcing the role of community pharmacy in promoting cardiovascular health.

Impact of the TOMA® individualised medication preparation service on therapeutic adherence among patients with multimorbidity in community pharmacy

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Background: Chronic multimorbidity represents an increasing challenge for healthcare systems and is frequently associated with complex therapeutic regimens and difficulties in medication adherence. In Portugal, it is estimated that 38.3% of the population lives with two or more chronic conditions, corresponding to approximately 3.9 million individuals. In this context, pharmaceutical care services focused on medication management and continuous patient follow-up may play an important role in improving treatment adherence and health outcomes. Following the initial implementation of the service, the present study aimed to evaluate the consolidation and clinical impact of the TOMA® medication management model in community pharmacy practice.

Objective: To assess the impact of the TOMA® medication management service on therapeutic adherence and pharmaceutical follow-up among patients with multimorbidity in community pharmacies.

Method: The study was conducted between January and December 2025 and evaluated the implementation of the TOMA® service, a pharmaceutical care model designed to support medication management in patients with complex therapeutic regimens. The service includes: a digital platform connecting patients, caregivers, pharmacies and the TOMA® support team continuous pharmaceutical support, allowing patients and caregivers to clarify medication-related questions individualised medication preparation in sachets, organised by day and time of administration for a 28-day treatment period. Service data were collected through the technological platform and analysed to assess patient adherence, retention and satisfaction.

Results: The service was implemented in 71 community pharmacies, involving 602 patients with chronic multimorbidity and complex therapeutic regimens. Among participants, 68% were female and 51% were aged between 41 and 60 years. Service enrolment was mainly initiated by the patients themselves (58%), while 42% were enrolled through caregivers, highlighting the important role of caregivers in medication management. Additionally, 38% of patients regularly monitor clinical or biochemical parameters in the pharmacy, including conditions such as diabetes, hypertension and dyslipidaemia, demonstrating the integration of the service in chronic disease management. The service showed a retention rate of 99%, indicating high continuity of use. Regarding satisfaction, 90% of patients

reported being “very satisfied” with the service, while 10% reported being “satisfied”, reflecting high acceptance of this pharmaceutical care model.

Conclusion: The implementation of the TOMA® medication management service in community pharmacy proved to be an effective strategy to support patients with multimorbidity and complex therapeutic regimens. This pharmaceutical care model contributes to improving therapeutic adherence, strengthening continuous patient follow-up and reinforcing the role of community pharmacies in the management of chronic diseases and the delivery of integrated healthcare services.

Digital health literacy in diabetes management in community pharmacies: professional training and public awareness on the use of smart insulin pens

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Background: Diabetes mellitus represents a major public health challenge and is associated with significant morbidity and impact on quality of life. Technological innovation has introduced new digital tools that can support therapeutic management and improve diabetes self-care. Among these innovations are smart insulin pens, devices capable of automatically recording insulin administrations and integrating data with digital applications, enabling the identification of dosing patterns and supporting more informed clinical decisions. However, the adoption of these technologies depends on the level of digital health literacy among both patients and healthcare professionals. In community pharmacy practice, it was observed that many patients were unfamiliar with smart insulin pens and some pharmacy professionals had limited knowledge regarding their benefits compared with conventional insulin pens. In this context, community pharmacies are well positioned to promote digital health literacy through professional training and public health education initiatives.

Objective: To promote digital health literacy in diabetes management through the training of pharmacy professionals and the implementation of a community pharmacy awareness campaign on the use and benefits of smart insulin pens.

Method: An awareness campaign entitled “The Digital Era of Diabetes: Connect with Your Health” was developed and implemented in 100 community pharmacies. The initiative included three main components. Professional training:

Training sessions were delivered to pharmacy teams to strengthen knowledge about technological innovation in diabetes management, including the functioning of smart insulin pens, their advantages compared with conventional insulin pens and their role in supporting therapeutic management. Provision of demonstration devices: Following the training, each participating pharmacy received a smart insulin pen device, enabling practical demonstrations for patients interested in learning more about this technology. Public awareness campaign: Educational materials were displayed in the pharmacy setting and a digital communication plan was implemented on social media, with educational content published over four weeks. The campaign addressed topics such as the functioning of smart insulin pens, integration with digital applications, automatic recording of insulin administrations and the potential benefits of these technologies in diabetes management.

Results: The campaign was implemented in 100 community pharmacies, involving pharmacy teams in the dissemination of educational content on technological innovation in diabetes management. During the initiative, it was identified that many patients were unaware of the functionalities of smart insulin pens or reported difficulties in their use. It was also observed that some pharmacy professionals had limited knowledge regarding the advantages of these devices compared with conventional insulin pens. Professional training strengthened pharmacy teams' knowledge of this technology and enabled practical demonstrations for patients using the devices available in pharmacies. These demonstrations supported pharmaceutical counselling for insulin-dependent patients, highlighting the simplified use of the device and its extended durability, which can reach up to five years.

Conclusion: Community pharmacy awareness initiatives can significantly contribute to improving digital health literacy and increasing knowledge about new technologies applied to diabetes management. Professional training combined with practical demonstration of innovative devices reinforces the role of community pharmacies as active agents in health education and in the dissemination of therapeutic innovation.

Linking prescribing and adherence: the impact of e-prescription renewal in community pharmacy- A case report.

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Background: Electronic prescribing systems allow healthcare providers to transmit prescriptions directly to community pharmacies, improving safety and continuity of care. For chronic treatments, prescriptions must be periodically

renewed—typically every 6 to 12 months—to ensure uninterrupted therapy. However, delays in renewal processes or administrative constraints can lead to gaps in treatment and reduced medication adherence. Evidence suggests that general practitioners (GPs) spend considerable time managing prescriptions within electronic health record systems, which may contribute to such delays. Involving community pharmacists in initiating prescription updates may represent a strategy to facilitate timely access to medications.

Objective: To examine the effect of a pharmacy-driven e-prescription update request system on ensuring continuity of pharmacological treatment and improving patient access to medications.

Method: A quasi-experimental case study was conducted over six months in a rural community pharmacy and a primary care center in Badajoz (Spain). A collaborative agreement between the pharmacist and GP allowed the pharmacy to initiate e-prescription update requests directly. The intervention followed a dual-level approach involving both patient interaction and physician coordination. When patients presented for dispensing of chronic medications without an active e-prescription, the pharmacist offered to contact the GP to request renewal or modification. Communication with the GP was carried out via text messaging to ensure rapid and efficient information exchange.

Results: The study involved 640 patients under the care of the same pharmacist, GP, and nurse. A total of 931 pharmacist-initiated interventions resulted in 1,324 prescription updates. The distribution of these modifications was as follows: 1,135 (85.72%) renewals of ongoing treatments 92 (6.95%) initiation of new therapies, 58 (4.38%) adjustments to prescription validity dates, 25 (1.89%) changes in dosage or therapeutic regimen, 14 (1.05%) alterations in quantity or pharmaceutical form. All requests were accepted by both the GP and patients, achieving a 100% success rate. The intervention ensured continuous access to medications and minimized the likelihood of missed doses due to prescription expiration.

Conclusion: This case report underscores the value of community pharmacists in supporting medication adherence through proactive management of e-prescription updates. Direct and efficient communication between pharmacists and GPs facilitates uninterrupted treatment, particularly for chronic conditions. Furthermore, this approach helps reduce administrative workload in primary care and contributes to a more coordinated and patient-focused healthcare delivery model.

History of community-based pharmacy residency programs in the US

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Background: US pharmacy residency programs and individuals who complete them have been widely recognized for enhancing clinical practice and driving innovation. Community-Based Pharmacy Residency Programs (CPRPs) were first introduced in the US more than 50 years ago. As the need for healthcare continues to shift from health-systems to the community, it is important to document the history and evolution of training programs in the community.

Method: A review of the literature and historical documents was conducted to trace the chronological history of CPRPs. Data was synthesized to document the development, key milestones and people involved, and factors contributing to the evolution of the current Postgraduate Year One (PGY1) Community-Based Pharmacy Residency Programs accredited by the American Society of Health-System Pharmacists (ASHP) in partnership with the American Pharmacists Association (APhA).

Results: The first documented CPRP was established in 1984 in an independent pharmacy in New Jersey. In 1986, APhA published CPRP programmatic essentials outlining the skills, outcomes and specific objectives for community pharmacy residency training including management, drug distribution, clinical services, drug informatics, home health care and long-term care. APhA engaged in the development of CPRPs by appointing an advisory committee and revising guidelines again in 1997 to better align with patient care services and skills in community-based pharmacies. In 1999, APhA and ASHP partnered to create the first accreditation standard for CPRPs. Since then, the standards were updated several times to align with practice culminating in an unprecedented harmonization of four accreditation standards into one standard for all types of US residency programs in 2025. Standards harmonization validated the significance of CPRP training and advancement of community-based pharmacy practice. The growth and practice location of CPRPs has been substantial, increasing from less than 30 programs in the 1990's to 203 accredited programs in 2025 across the US. Value for the practice include development of services, staff and financial benefits. The types of community-based pharmacy residency training sites have evolved to also include specialty pharmacies, community health centers, and health-system community-based pharmacies. Patient care services include medication management, chronic disease management, management of minor acute illnesses, and preventive care. CPRPs and the residents who complete them have impacted the advancement of and access to sustainable

patient care services in community-based pharmacies and have contributed to the evidence through practice-based research projects. A multitude of former CPRP residents serve as leaders and change agents to advance community-based pharmacy practice. Unfortunately, approximately 15% of the practice sites available are unfilled as a result of the inability to recruit a resident. Funding, program awareness, administrative burden for program design and implementation, and establishment of the roles and responsibilities of practitioners involved in the program are amongst the many challenges facing CPRPs despite their acceptance, value, and growth.

Conclusion: Despite challenges, CPRPs continue to evolve and grow in the US. The trainees completing these programs will continue to lead to the advancement and transformation of community-based pharmacy practice and increasing access to care and improved patient outcomes.

Bringing prevention closer: Community pharmacy engagement in opportunistic colorectal cancer screening

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Background: Colorectal cancer (CRC) remains one of the leading causes of cancer-related morbidity and mortality in Portugal. Screening is proven to be effective for early detection and mortality reduction; however, opportunities for population-wide screening remain limited, leaving many individuals unscreened. This work describes a community-based prevention strategy in which opportunistic CRC screening is delivered through community pharmacies, highlighting their role in raising awareness, promoting adherence and facilitating screening uptake. It also outlines an ongoing campaign being implemented in the municipality of Lisbon through collaboration between health sector stakeholders and local authorities.

Method: A six-week awareness and CRC screening campaign is being implemented in more than 130 community pharmacies across Lisbon. Eligible participants are individuals aged 45 to 74 years old who meet defined criteria. The intervention comprises pharmacist-led opportunistic screening through the provision of faecal immunochemical test (FIT) kits, supported by counselling, information and

guidance. The campaign, promoted by MovSaúde in collaboration with Europacolon, the Portuguese National Association of Pharmacies (ANF), Centro de Medicina Laboratorial Germano de Sousa and the Lisbon City Council, aims to distribute up to 4,000 kits. Indicators of participation, completed screenings and positive results are currently being collected to evaluate the campaign and enable comparison with previous national initiatives conducted under similar conditions.

Results: Previous national initiatives involving community pharmacies (2021–2022) demonstrated high participation in colorectal cancer screening, with approximately 4–5% of participants presenting positive results in faecal occult blood testing, highlighting the potential of this model to identify individuals requiring clinical follow-up. International evidence similarly reports high test return rates when pharmacies are involved in organized screening programmes. As the current campaign is ongoing, only preliminary data are available, and final results will be presented in the poster.

Conclusion: Integrating community pharmacies into CRC screening strategies may represent a cost-effective and accessible public health approach, enhancing early detection, timely referral and health outcomes. Locally driven initiatives supported by institutional partnerships reinforce the strategic role of community pharmacies within the healthcare system and hold strong potential for replication and scalability in broader cancer prevention policies.

A framework for diabetes medication therapy management and pharmacist consultations

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Background: Diabetes is a condition with many clinical aspects to focus on at various ages and stages. While urgent presenting needs will be addressed initially, having a guidelines-based framework can aid in identifying next-step pharmacist consultations and pharmaceutical care gaps, as well as assist in the development of care plans and prioritization of future activities. The Diabetes Canada Guidelines and “ABCDE’s of Diabetes” include factors for diabetes management; however, these resources do not identify pharmacist services that can support these factors. The Framework for Diabetes Medication Therapy Management and Pharmacist Consultations links the “ABCDE’s of Diabetes” factors with pharmacist consultation topics and activities supporting diabetes medication therapy management and condition management. This resource is positioned as a pharmacist consultation framework, as pharmacists can assess and account for all medications, not just diabetes medications.

Objective: To develop a structured guidelines-based framework linking the “ABCDE of Diabetes” to specific pharmacist activities to support medication optimization and condition management.

Method: The Framework for Diabetes Medication Therapy Management and Pharmacist Consultations identifies distinct pharmacist consultations topics for diabetes medication therapy management and condition management. The recommended consultation topics were informed by a review of the Diabetes Canada Guidelines and “ABCDE’s of Diabetes”; Health Canada, Public Health Agency of Canada and provincial health diabetes information; Canadian pharmacists’ scope of practice; and commercial product information, such as diabetes-related point-of-care tests and devices. Each consultation was then grouped under a section of the “ABCDE’s” for ease of reference and to help tailor activities based on patient priorities. This approach was informed by Alicia Chin’s role as the former pharmacist owner of 9 diabetes-specialized pharmacies (Ontario, Canada) focused on consultative care and diabetes medication therapy management.

Results: The Framework for Diabetes Medication Therapy Management and Pharmacist Consultations includes 45 pharmacist consultation topics categorized under one of the 8 “ABCDE’s of Diabetes” factors for optimal diabetes management. The variety of consultations cited is a reflection of the complexity of diabetes medication therapy management and diabetes care. It is also an indication of the broad range of outcomes impacts that can be achieved when offering comprehensive pharmaceutical care for people living with diabetes.

Conclusion: The Framework for Diabetes Medication Therapy Management and Pharmacist Consultations is a guidelines-informed resource for the provision of comprehensive pharmaceutical care. It provides pharmacist touchpoint suggestions for people living with diabetes. Next steps in dissemination include sharing the resource with pharmacists for their feedback on content, presentation and utility. In addition to the listing of pharmacist consultation topics, strategies for prioritizing future consultations can be added to the resource. Larger strategies could include moving beyond a framework to having a supportive “library” of specific consultations and resources. For example, clinical reference links or even detailed consultation templates for clinical, documentation and remuneration purposes.

Content driven leadership in Community Pharmacy: Imagining regional care transformation through clinical areas of expertise

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Healthcare systems worldwide face growing pressure due to rising demand, more multimorbidity, and increasing costs. In many regions, a few patient groups place a heavy burden on primary care, while care processes often remain fragmented and inefficient. To keep healthcare affordable, accessible, and high quality, transformation must start in primary care and be organized around defined patient groups, not isolated professional activities.

In the Netherlands, community pharmacy helps drive this transformation through the role of the kaderapotheker. A kaderapotheker is an experienced community pharmacist with advanced expertise in a clinical domain. They take a visible leadership role at the regional level. The clinical domains are diabetes, respiratory disease, cardiovascular disease, and care for fragile patients. Instead of formal authority, the kaderapotheker leads from pharmaceutical and clinical knowledge. They connect pharmacists, general practitioners, specialists, and other stakeholders, initiate regional initiatives, and organize care around shared clinical priorities. This approach allows community pharmacy to be an equal partner in interprofessional collaboration and contribute to population-focused, efficient care.

This workshop presents the kaderapotheker as a model for content-driven leadership in community pharmacy. Using four clinical domains, participants will explore which patient groups in their region need close attention in the pharmacy, general practice, and wider healthcare system. The workshop focuses on multimorbidity, medication burden, and opportunities for optimization, prevention, and deprescribing, all viewed from a population-focused perspective.

During the workshop, participants will reflect and imagine how interprofessional collaboration in one clinical domain could be organized in their region or country. They will consider what would change if a community pharmacist took a clear leadership role for that patient group. The workshop does not aim for full implementation plans but focuses on finding the first meaningful step toward regional care transformation and showing the added value of pharmaceutical leadership in primary care. By creating space for reflection, exchanging perspectives, and imagining new roles, the workshop helps participants see how leadership from within the profession can improve healthcare systems and make community pharmacy more relevant and attractive.

Addressing irrational medicine use and patient safety in Armenian community pharmacies

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Background: Medication safety is one of the top priorities identified by the World Health Organization. Irrational use of medicines is a major threat to patient safety and a significant global public health concern. According to the World Health Organization, two-thirds of adverse events occur in low- and middle-income countries, and 83% of these are preventable. In Armenia, irrational use of medicines and self-medication are common, particularly in community pharmacies. However, no studies have been conducted to understand the magnitude of inappropriate use of medicines in Armenia and explore patient safety issues in the country. Contributing factors include the absence of standardized protocols, clinical complexity, and gaps in pharmacists' practical training. In addition, licensed, pharmacists have noticed that when graduates of pharmaceutical programs come to practice, it becomes obvious that a very small part of their knowledge is applicable to practice, and certain important knowledge and skills are missing. Therefore, promoting patient safety through patient-oriented approaches, along with intensive staff training, is essential.

Objective: To improve patient safety by enhancing community pharmacy practices and reducing irrational use of medicines through a targeted training program.

Method: The program was implemented in a large pharmaceutical retail chain in Yerevan over six months. Each pharmacy employed 5–6 staff members. Newly recruited pharmacists underwent supervised training, including a 4-hour interactive session based on clinical cases and quiz-based learning. The training focused on identifying prescribing errors, performing double-checks, assessing drug interactions, and providing patient counseling.

Results: Following the training, pharmacists demonstrated improved dispensing practices, including consistent double-checking and safer prescription evaluation. Trained pharmacists spent 10–15 minutes counseling patients, reviewing medications, and suggesting necessary changes. They also actively discouraged inappropriate self-medication by referring patients to healthcare providers when needed.

Conclusion: Community pharmacy staff play a major role in ensuring patient safety. Structured training programs and continuous professional development can significantly improve dispensing practices and reduce irrational medicine use.

Optimizing URTI self-care through pharmacist recommendations: Findings from a survey on symptom overlap and treatment behaviours

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Background: Upper respiratory tract infections (URTIs) are among the most common reasons for patient self care and pharmacy consultation worldwide. Primarily caused by viral pathogens, URTIs encompass a wide variety of symptoms, severity, and societal burden. While self-limiting, the high frequency of URTIs places a significant burden on healthcare system and society, particularly during peak flu season. Despite advances in diagnostics, management primarily relies on multi-symptom over the counter (OTC) control. To characterize the real world symptom burden, duration, treatment behaviours, and patient attitudes surrounding URTI care, including perspectives on antibiotics and pharmacist guidance, a global consumer research survey was conducted.

Method: The research survey was conducted over Brazil, Germany, Spain, Italy, Mexico, Philippines, Poland, Romania, Saudi Arabia, Thailand, UK, South Africa, Australia, USA, Malaysia, and Netherlands. Eligibility criteria included ages 18-64 that experienced respiratory symptoms with treatment in the past 6 months. The global survey included 1,050 USA participants. Participants completed symptom history, duration, treatment behaviours, healthcare interaction patterns, perceptions of antibiotics, and trust in pharmacists. Analyses used descriptive summaries and subgroup comparisons across gender, age, and symptom categories.

Results: Among 1,050 USA adults surveyed, sore throat (50%), runny nose (60%), and sneezing (54%) emerged as the most common upper respiratory symptoms experienced. During the most recent episode of respiratory symptoms, cough symptoms frequently overlapped with these symptoms—reported by 48.7% with sore throat, 52.7% with runny nose, and 45.2% with sneezing—highlighting the multi-symptom burden. Symptom duration commonly ranged from 2-5 days. Chesty cough, dry/tickly cough, and chest congestion (4.02, 3.77, and 4.08 days, respectively) were longest while headache and fever (2.73 and 2.87 days) were shortest in duration. Nearly half (48%) attributed their symptoms to a cold or flu. Antibiotics were used by 53% of adults at least once in the past 6 months with 66% being prescribed for cold or flu. Misconceptions were prevalent as 61% believed antibiotics quickly relieve symptoms and 54% perceived antibiotics are effective for colds and flu.

Pharmacists were viewed as an integral resource for information. Nearly one in four participants (24%), particularly younger adults and those with sore throat or cough symptoms, consulted a Pharmacist. Trust in Pharmacist recommendations were high as 75.5% would trust a product recommended by a pharmacist, and 77% valued pharmacist advice.

Conclusion: These findings demonstrate a clear need for multi-symptom OTC solutions that address the overlapping nasal, cough, and sore throat symptoms experienced by most patients during URTI. Because consumers often struggle to select appropriate treatments for varying symptom durations—and frequently hold misconceptions that drive unnecessary antibiotic use—Pharmacist recommended multi-symptom treatment can simplify care, improve adherence, and support antimicrobial stewardship. A potential recommendation for treatment could be a non-steroidal anti-inflammatory drug (NSAID), expectorant, and cough suppressant to provide robust multi-symptom control. Given the high trust placed in Pharmacists and the frequency of multi-symptom presentations with URTI, U.S. Pharmacists are optimally positioned to guide patients toward evidence based multi-symptom OTC therapies and reduce inappropriate antibiotic use.

The role of community pharmacists in expanding safe self-care access: Pharmacist-led models to address barriers in Rx to OTC switches.

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Background: Expanding access to nonprescription medicines through prescription-to-over-the-counter (Rx-to-OTC) switches represents a key strategy for supporting patient self-care. Despite potential public health benefits, many switch applications face rejection, creating global disparities in medicine availability. As frontline healthcare providers, community pharmacists are uniquely positioned to address regulatory concerns around safety and appropriate use, yet their role in enabling successful switches remains underutilized. Understanding these barriers and how pharmacist involvement can overcome them is essential for developing effective strategies to safely expand self-care options.

Objective: To analyse reasons for Rx-to-OTC switch rejections across multiple countries and identify patterns that could inform future switch strategies.

Method: Qualitative analysis of 19 International Nonproprietary Names across 10 therapeutic areas in eight countries, using publicly available regulatory documents to categorise rejection reasons.

Results: Thirty-one rejection cases revealed safety concerns, self-diagnosis challenges, and behavioral risks as primary barriers. Countries with successful switches often employed pharmacist-led models with screening protocols and professional oversight. The United Kingdom and Australia demonstrated highest nonprescription availability (9 and 7 medicines respectively), frequently utilising pharmacy-based safeguards.

Conclusion: Regulatory frameworks that incorporate pharmacist involvement show promise in balancing safety with accessibility. Community pharmacies are strategically positioned to address key regulatory concerns through professional oversight. Future switch applications could benefit from incorporating pharmacy-based risk mitigation strategies to expand patient access to self-care medicines.

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Advancing pharmaceutical compounding in Portugal: Evidence-based resolutions and action points from community pharmacies

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Background: Pharmaceutical compounding remains a critical component of community pharmacy practice, ensuring access to personalized medicines when no suitable industrially manufactured alternative exists. In Portugal, community pharmacies contribute significantly to individualized therapy and may play an increasingly relevant role in mitigating medicine shortages. However, the sustainability and consistency of compounding practice are constrained by regulatory ambiguity, heterogeneous

implementation of quality systems, and limited alignment with contemporary European standards. Building on a previous SWOT analysis of pharmaceutical compounding in Portuguese community pharmacies, this work aimed to move beyond problem identification and define practical, evidence-based solutions to strengthen the sector. The objective was to convert strategic challenges into actionable priorities capable of improving medicines safety, regulatory coherence, and harmonization of good practices.

Method: A practice-based qualitative approach was used, combining two complementary sources of evidence. First, data were obtained through a structured questionnaire addressing regulatory, technical, organizational, and training-related aspects of pharmaceutical compounding in community pharmacies in Portugal. The questionnaire captured the perspectives of professionals directly involved in compounding activities and highlighted both persistent barriers and areas for improvement. Second, the findings were discussed during a focused working meeting with community pharmacies actively engaged in compounding practice. This meeting enabled critical interpretation of the results within real-world operational and regulatory constraints, including quality assurance requirements, subcontracting limitations, workforce capacity, and day-to-day workflow challenges. The combined evidence was then synthesized to identify recurring themes and prioritize feasible solutions aligned with practice needs and European Good Compounding Practices.

Results: The analysis identified regulatory and operational uncertainty as the main barriers to a more robust and sustainable compounding practice in Portuguese community pharmacies. Participants consistently highlighted the need for clearer and updated legislation, particularly regarding quality assurance systems, subcontracting models, and the practical distinction between magistral and official preparations. These gaps were seen as major contributors to inconsistent interpretation, uneven implementation, and reduced confidence in practice development. Four priority action areas emerged. First, the adoption of risk-based quality management systems proportionate to the scale and complexity of compounding activities. Second, the establishment of standardized training pathways and competency requirements for pharmacists and technical staff. Third, the development of clearer technical guidance and operational support tools to promote harmonized implementation. Fourth, closer alignment of Portuguese practice with European Good Compounding Practices to improve consistency and professional recognition. Collectively, these measures were identified as both feasible and necessary to improve safety, support compliance, and sustain compounding services in community pharmacy settings.

Conclusion: This work translates strategic challenges previously identified in Portuguese pharmaceutical compounding into concrete and practice-oriented solutions. The proposed priorities provide a realistic roadmap to improve patient safety, strengthen regulatory consistency,

and support the long-term sustainability of community pharmacy compounding. By reinforcing technical standards and enabling a more coherent regulatory framework, these actions can enhance the contribution of community pharmacies to personalized medicines and medicine shortage response within the healthcare system.

Pharmacist-led Asthma and COPD community clinic assessment for respiratory enhancement (PAC-CARE)

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Background: Asthma and chronic obstructive pulmonary disease (COPD) are prevalent chronic conditions. Pharmacists, highly accessible first line healthcare professionals, play an increasingly important role in chronic disease management. Following the adoption of Bill 31 in 2020, Quebec pharmacists were authorized to provide remunerated Pharmacist-led Care (PLC) for several conditions, including asthma and COPD. In September 2023, PBC were established to further expand access to clinical pharmaceutical services and, up to now, their implementation has not been evaluated.

Objective: To assess the feasibility and profitability of asthma and COPD PLC provided in PBC.

Method: This cohort study included retrospective and prospective components. Six community pharmacies with a PBC (intervention group) and six without a PBC (control group) were recruited between March and June 2025. The retrospective period began three months after PBC opening and continued until pharmacy enrollment, while the prospective period lasted from enrollment to April 30, 2025. PLC for asthma or COPD includes one initial consultation and up to two reimbursed follow-up visits which occurred until the end of the data collection period or, at the latest, within one year of the initial consultation. Additional follow-ups may occur but are not reimbursed. One pharmacy technical assistant (PTA) per pharmacy supported data collection by identifying patients who received asthma or COPD PLC through a search of pharmacy records using Drug Identification Numbers (DINs) for initial visits. Records were printed, anonymized, and securely sent to the research team. Descriptive statistics were used to summarize PBC operations, characteristics of salaried pharmacists and patients receiving PLC (means $\pm$ SD for continuous variables; frequencies and proportions for categorical variables).

Results: There were 115 asthma or COPD PLC in the 6 pharmacies with a PBC and only 1 asthma PLC in the pharmacies without a PBC, over the study period, with a

mean of 1.06 follow-up visits per PLC. In pharmacies with PBC, 50 PLC (43.5%) were for asthma and 65 (56.5%) for COPD. The mean age of asthma patients and COPD patients were 54.2 and 72.9 years respectively. Women accounted for 64% asthma PLC and 65% COPD PLC. No follow-up was billed for 35 PLC (30.4%), while 38 (33.1%) included one billed follow-up and 42 (36.5%) included two. Asthma and COPD PLC generated a small profit of CAD 4.70 per case based on current professional reimbursement for PLC visits, other reimbursed clinical acts and pharmacists' salaries.

Conclusion: The presence of a PBC substantially increased the number of asthma and COPD PLC, with 99% provided in pharmacies with a PBC. Our data suggest pharmacists would need to complete the initial consultation and the two follow-up visits in less than one hour in total and also optimize billing opportunities for the service to be financially sustainable.

Pharmacist prescribing: An overview of reviews examining accessibility, effectiveness, safety, patient experience, and economic impact

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Background: Healthcare systems internationally are experiencing increasing pressure due to workforce shortages, rising demand for primary care services, and growing complexity of patient needs. Expanding the scope of pharmacist practice to include prescribing has been implemented in various jurisdictions as a strategy to improve access to care and support health system efficiency. As pharmacist prescribing continues to expand, a growing body of literature has evaluated its impact across multiple domains, including patient access, clinical outcomes, safety, and health system performance. Synthesising this evidence is important to inform policy decisions and guide implementation.

Objective: To synthesise evidence from literature reviews on the accessibility, effectiveness, safety, patient experience, and economic impact of pharmacist prescribing.

Method: An analysis of reviews was conducted using Cochrane methodology and reported in accordance with PRISMA guidelines. Searches were conducted in PubMed, CINAHL, Scopus, and Google Scholar between 2023 to 2026. Search terms included combinations of pharmacist, prescribing, safety, effectiveness, and outcomes. Titles,

abstracts, and full texts were screened independently by two reviewers.

Results: A total of 5,745 records were identified. Following duplicate removal, 2,847 records underwent title and abstract screening, with 186 records subsequently assessed for full-text eligibility. Of these, 20 reviews met the inclusion criteria, comprising ten scoping reviews, nine systematic reviews, and one rapid review. Collectively, these reviews synthesized evidence from 765 primary studies (not excluding duplicates). Findings were influenced by variability in quality, prescribing models, settings, and evaluation methods. Six reviews synthesised evidenced across all five key domains of accessibility, effectiveness, safety, patient experience, and economic impact. Accessibility outcomes (n=13 reviews), were most commonly assessed through measures such as time to treatment, wait times, same-day access to care, and service availability. Clinical effectiveness (n=13 reviews) was evaluated using symptom resolution, disease control, and achievement of therapeutic targets. Safety outcomes (n=10 reviews) included adverse events rates, prescribing appropriateness, guideline adherence, and medication errors. Economic outcomes (n=11 reviews) focused on healthcare utilisation, cost of care, and system efficiency and productivity impacts. Patient reported experience outcomes (n=10 reviews) included patient satisfaction, acceptability, trust, perceived quality of care, and awareness of understanding of the pharmacist prescribing role.

Conclusion: These contemporary findings highlight the multidimensional value of pharmacist prescribing and reinforce its potential to address workforce pressures while being cognisant of standards of patient care. However, interpretation should consider methodological limitations, including heterogeneity in study design and methodology, quality of statistical evidence, outcome definitions, and prescribing models. Future research should prioritise standardisation of outcome measures and reporting frameworks to enable meta-analysis. Meta-analysis would allow for pooled effect estimates, improved precision, and more robust quantification of the impact of pharmacist prescribing. Strengthening methodological consistency and enabling quantitative synthesis will support more definitive conclusions to inform safe, scalable, and equitable implementation across healthcare systems.

When communication makes a difference: Mentalizing in pharmacy encounters

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Background: Pharmacies play an important role in the primary healthcare system, where communication between staff and customers is essential for ensuring understanding,

safety, and correct use of medication. Pharmacy encounters are often brief and take place in busy environments, requiring staff to communicate complex information clearly and effectively. In 2023, the three Danish pharmacy sector organizations launched a national initiative to strengthen mentalizing communication in community pharmacies. Mentalizing refers to the ability to understand and reflect on one's own and others' thoughts, feelings, and intentions. In pharmacy practice, this involves meeting customers at their level and addressing what is meaningful and important to them. This project provides practice-based knowledge about how mentalizing communication in pharmacy encounters influences customers' experience of communication quality. By examining its application in everyday pharmacy practice, the project contributes to bridging the gap between theoretical knowledge of mentalizing and its practical implementation in pharmacy settings. The purpose of this project is to examine how an increased focus on mentalizing influences the customers' experience of communication quality in pharmacy encounters.

Method: The method used in this project is quantitative data collection in the form of a questionnaire consisting of six questions. The questionnaire was distributed immediately after customers had interacted with a pharmacist or pharmacy technician. The questionnaire covered core dimensions of perceived communication quality, including being listened to, understood and taken seriously, whether the atmosphere felt positive and safe, and whether they left the pharmacy with confidence in the information provided. The data collection is ongoing and two pharmacy students are responsible for distributing the questionnaires to ensure neutrality and reduce the risk of customers being influenced by the staff member who conducted the encounter. All responses are anonymous and are placed in a closed box in the pharmacy. This procedure is intended to encourage honest and independent answers and thereby strengthen the validity of the study.

Results: Data collection is currently underway. Preliminary expectations suggest that systematic use of mentalizing communication will improve customers' experience of being heard, understood and supported and enhance the sense of safety and overall communication quality in their interaction with pharmacy staff. The results of the project will be presented in a poster format, highlighting key findings and conclusions.

Conclusion: The project is ongoing. An increased focus on mentalizing in pharmacy encounters is expected to have a positive impact on customers' perception of communication quality. Customers are expected to feel more acknowledged, understood, and taken seriously when staff apply a mentalizing approach. It is further expected that mentalizing communication will contribute to a calmer and more reassuring atmosphere during the encounter, thereby strengthening the overall perceived quality of the interaction.

Globally evolving patient perceptions and use of antibiotics for upper respiratory tract infections: The role of pharmacy: Findings from the STAR 3 study

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Background: Inappropriate use of antibiotics (ABs) in upper respiratory tract infections (URTIs) is a key contributory factor in antimicrobial resistance (AMR), a top 10 WHO global public health threat. The Sore Throat and Antibiotic Resistance (STAR) global survey has previously identified public misconceptions on appropriate AB use. Regular evaluation of patient perception and expanding the knowledge base in a wide range of countries is critical to inform the impact of AMR education and communication strategies and determine how pharmacists, as accessible healthcare professionals, can best promote responsible AB use and appropriate self-care for respiratory symptoms.

Objective: To conduct the STAR survey on AB use and perceptions in URTIs and pharmacy consultations for respiratory illness in an expanded number of countries and compare with previously collected data.

Method: An observational, questionnaire-based study (STAR) was conducted to determine incidence of respiratory illness and symptoms, AB use, and attitudes and perceptions of ABs in adults who had experienced and received treatment for respiratory symptoms in the previous six months. STAR 3 was conducted in November/December 2025 in four new countries (Chile [CH], Colombia [CO], Indonesia [IN] and Peru [PE]; n=4,000), building on findings from STAR 2 conducted in 16 countries in June 2024 (Australia, Brazil, Germany, Italy, Malaysia, Mexico, Netherlands, Philippines, Poland, Romania, Saudi Arabia, South Africa, Spain, Thailand, United Kingdom and United States; n=16,781) and STAR 1 (12 countries, May 2022; n=12,000).

Results: In STAR 3, 49% (PE), 43% (IN), 41% (CO) and 25% (CH) of respondents consulted a pharmacist for advice for their most recent respiratory illness, compared with 37% globally (all global data from STAR 2). The percentage of respondents taking at least one AB for respiratory symptoms in the previous six months was considerably higher in PE (81%) and IN (78%) than in CO (64%), CH (59%) and vs. 57% globally. Concern over AMR was high, particularly in LATAM countries: 76% (PE), 75% (CO), 71% (CH) vs. 64% (IN) and 63% globally. Some 65% (PE), 61% (IN), 56% (CO) and 48% (CH) believed ABs were an effective respiratory illness treatment vs. 51% globally. Indeed, across all countries, more respondents regarded ABs as part of their normal treatment armamentarium vs. the 37% global average: 59% (PE), 46% (CO), 43% (IN) and 40% (CH). Countries where this belief was more prevalent were also those where respondents found it easy to obtain ABs: 66% (PE), 63% (CO), 58% (IN) and 36% (CH) vs. 36% globally.

Conclusion: In many STAR 3 countries, pharmacists were more likely to be consulted on respiratory illness than the global average. Use and misconceptions around ABs for URTIs remains a global issue, with LATAM countries and Indonesia having higher rates of AB use for respiratory illness than the global average, potentially driven by the perception that ABs are a normal, effective treatment option and facilitated by ease in obtaining ABs. Given these findings, pharmacists could play a pivotal role in educating patients on appropriate AB use and encouraging alternative symptomatic treatment use in the community pharmacy setting.

The 15-minute check in: Rapid capillary testing delivered by pharmacies

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Background: Chronic diseases such as cardiovascular disease and diabetes remain leading causes of morbidity worldwide. Early identification of lipid abnormalities and elevated HbA1c can significantly influence long term outcomes through informed lifestyle changes or timely medical intervention. Despite this, many individuals do not undergo routine testing. Community pharmacies, being highly accessible and frequently visited, may serve, as an ideal low threshold setting for basic health tests. The purpose of this project was to assess whether community pharmacies can safely and effectively provide capillary blood testing for lipids (HDL, LDL, total cholesterol, triglycerides) and HbA1c. In the pilot we also wanted to evaluate the feasibility, workflow integration, the customer experiences and the staff experiences.

Method: A phased approach was used. The service was first launched in five pharmacies, where pharmacy staff underwent structured theoretical and practical training

focused on sampling technique, understanding test parameters, quality procedures, and patient centred communication. After successful completion of the initial phase, the service expanded to 25 pharmacies. Through the test and the pilot we have carried out surveys to employees and customers. Data collected included operational feasibility, staff competence, customer- and staff experience, and the ability of pharmacies to deliver accurate measurements and clear result communication.

Results: Initial findings indicate that with appropriate training, pharmacy staff can competently perform capillary sampling and integrate the procedure into existing pharmacy workflows. Training: An important element of the training is the practical component. If too much time passes between the practical training and meeting real customers, there is a risk that staff may feel unsure about performing the procedure. It is therefore beneficial that there is a short time between training and service performance, and between each measurement. Feasibility and work flow integration: Pharmacies are often busy, and services that require extra time, in this case 10-15 minutes, can occasionally be challenging to carry out. However, the pharmacy staff participating in the pilot report that it generally works well, although they sometimes schedule appointments for customers at a later time. Customer experience: There are different types of customers who wish to have their values measured at the pharmacy. Some have stopped taking their medication (such as statins) on their own and want to see how their cholesterol levels are doing, while others are simply curious and want to be more aware of their health values. We have also had cases where customers felt unwell and measured very high values. These individuals were referred to the emergency clinic.

Conclusion: Capillary blood sampling appears to be a feasible and well received health service in community pharmacies. Pharmacy staff can be effectively trained to deliver accurate point of care tests and communicate results in a patient centered manner. The service has been well received by customers. The customers value the convenience and low threshold for obtaining health information.

Drug-induced disability in a long-term-care case

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Background: Taiwan has entered a super-aging society in 2025, which means that 20% of the population has reached the age of 65. The Ministry of Health and Welfare estimates that 900,000 people in Taiwan will need long-term care (abbreviated as "LTC") services in 2025, accounting for 3.85% of the total population. However, in addition to providing pharmaceutical care, the role of pharmacists in the LTC

system is still unclear. Therefore, this article aims to introduce a pharmacist providing service to a LTC case, then explore drug-induced disability and how the pharmacist help this case.

Method: A pharmacist visited an elderly male LTC case home referred by a home-care facility due to polypharmacy, drug allergies, and constipation, to check whether he has taken medication correctly, any side effects been occurring, and felt that some symptoms haven't being resolved.

Results: During the first visit, the pharmacist discovered that he has received treatment in three different departments at the hospital: cardiovascular, psychiatry and urology. He has taking 20 different medications, and also taking 13 different health supplements sent by relatives in the US. The pharmacist summarized problems: there was no interaction between the medication and health supplements, and he has taken MGO 250mg 2#TID, sennoside 20mg 1#HS, and three types of probiotic products and reached the daily water intake upper limit recommended by the cardiologist. Additionally, he needs to urinate six times a night while taking silodosin 4mg 1#BID. The pharmacist determined that constipation and nocturia might be related to anticholinergic effect of the psychiatric medication. Therefore, the pharmacist wrote a deer doctor's letter to the psychiatrist describing the case's constipation and nocturia, and recommending discontinuation of baclofen 5mg 1#TID; and also wrote to the urologist describing psychosomatic medications and recommending the addition of bethanechol. The second visit a week after the case's follow-up appointment, the pharmacist got that the psychiatrist had removed Baclofen and allowed he to adjust the dosage of alprazolam 0.5mg 1#HS according to sleep, bowel, and urination. While the urologist added bethanachol 25mg 1#TID. His nighttime urination decreased to three times and sleep improved. However, he told that he felt muscle weakness in the morning, so the pharmacist instructed he to gradually discontinue alprazolam by reducing the dose by 1/4 each week. If the muscle strength recovers, the patient could exercise moderately under safe conditions to improve muscle strength and constipation. The final visit, the case had discontinued alprazolam and sleeping well, urinating twice at night, with improved constipation. Muscle strength had recovered in the morning and he could exercise regularly. Therefore, the pharmacist advised that he could try to gradually discontinue lorazepam 0.5mg 1#HS and referred him to a physical therapist to strengthen muscle strength.

Conclusion: LTC focuses on functions (such as ADL and IADL), and many medications can affect daily living and cognitive functions. The anticholinergic effect in this article can cause constipation and nocturia, and sedative-hypnotic drugs can cause muscle weakness. Therefore, pharmacists should link drug side effects with functions to avoid drug-induced disability or dementia.

Pharmacy students' perceptions of community pharmacy as a potential future workplace following completion of community pharmacy internship

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Background: In Denmark, pharmacists are educated at two universities: the University of Southern Denmark (SDU) and the University of Copenhagen (KU). Both master's programmes include a six-month internship, required to obtain the authorization as a pharmacist in Denmark. At SDU, the internship consists of 11 weeks in a community pharmacy combined with clinical training at hospitals, whereas at KU it takes place exclusively in a pharmacy. The community pharmacy internship constitutes the students' first exposure to the professional working environment in a pharmacy. Previous studies have shown that employees in Danish community pharmacies often experience a high work pressure, poor work-life balance and limited opportunities for professional development. Yet, the latest employee satisfaction survey reports improvements in several areas, suggesting a sector-wide focus on work-life balance and employee well-being.

Objective: The project aims to investigate how pharmacy students perceive community pharmacies throughout their internships.

Method: A questionnaire was developed to explore students' perceptions of community pharmacies as a workplace. The questionnaire, created in Microsoft Forms, addressed the following themes: career considerations, work expectations and aspirations, professional development, and pharmacy internship experiences. Internship coordinators at SDU and KU arranged for students to complete the questionnaire following their theoretical coursework using a generated QR code to access the questionnaire. Responses were collected from SDU students undertaking internships in fall 2025 and spring 2026, and from KU students in spring 2026. Quantitative data were analyzed using descriptive statistics, while qualitative data were examined through content analysis.

Results: Data collection among students at the KU is ongoing. Preliminary analysis of participants from SDU (n=33) is presented. A total of 33 students completed the questionnaire, with most respondents (75%) identifying as female. Most of the respondents (84%) were born after 1997, while 16% were born between 1981 and 1996. Interest in medicine and health was the primary motivation for choosing pharmacy as a career path, and 69% of the respondents reported feeling satisfied with their internship. Salary,

working hours and professional development were identified as the three most important factors when choosing future employment. 85% considered community pharmacies to be an important part of the Danish healthcare system and 48% perceived good career opportunities within the sector. Meanwhile, 28% felt that community pharmacies could meet their career-related goals. Moreover, 18% of the students expressed interest in becoming pharmacy owners and 41% regarded the community pharmacies to be an attractive workplace.

Conclusion: The study shows that most of the students appreciate their internship experience and that the majority are willing to work at a community pharmacy after graduation, although typically not as a long-term career path. Limited perception of career progression and continued professional development are key reasons that most of the students do not wish to prioritize the community pharmacy sector as a future and long-term place of employment. Nonetheless, a minority of the students could see themselves becoming pharmacy owners in their future careers.

Assessment of antimicrobial stewardship practices in community pharmacies in Ga South District, Ghana: Utilising mixed methods study using observation, prescription audit, and survey

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Background: Antimicrobial resistance (AMR) is a growing global health challenge that threatens the effectiveness of existing antibiotics. Inappropriate antibiotic use, including dispensing without prescriptions and inadequate patient counselling, significantly contributes to the development of resistance. Community pharmacies are critical points of access for antibiotics and play a central role in implementing antimicrobial stewardship (AMS) programs. However, evidence on the sustainability of AMS practices in community pharmacy settings, particularly in low-resource environments such as New Weija, Ghana, remains limited. Understanding both the current practices and the factors that enable or hinder long-term implementation is essential for designing interventions that can improve rational antibiotic use and reduce AMR burden. This study aims to evaluate sustainable AMS practices in community pharmacies, identify gaps, and provide recommendations for strengthening AMS in both hospital and community settings.

Method: A cross-sectional mixed-methods design will be employed, combining non-participant observation, prescription audits, and staff surveys. Data collection will be conducted by trained pharmacists or pharmacy interns. Non-participant observations will document antibiotic dispensing

and patient counselling practices using a structured checklist. Prescription audits will review anonymized antibiotic prescriptions to assess appropriateness, adherence to guidelines, dosage, and duration. A structured survey will be administered to pharmacy staff to assess knowledge, attitudes, and perceived barriers to sustaining AMS practices. Quantitative data from audits and surveys will be analysed using descriptive statistics, including frequencies and percentages, and internal consistency of attitude items will be evaluated with Cronbach's alpha. Observational data will be summarised thematically to identify patterns in dispensing and counselling behaviours. Triangulation of findings across methods will enhance the reliability and validity of results.

Results: Observations are expected to reveal both adherence and gaps in patient counselling and antibiotic dispensing practices. Prescription audits are likely to identify a mix of appropriate and inappropriate antibiotic use, highlighting areas for improvement. Survey results are anticipated to show variable levels of knowledge, attitudes, and perceived barriers among pharmacy staff regarding sustainable AMS. Key factors expected to influence sustainability include staff training, availability of guidelines, workflow constraints, and pharmacist motivation.

Conclusion: The study is expected to identify enablers and barriers to the sustainability of AMS practices in community pharmacies. Findings will provide evidence-based recommendations for improving rational antibiotic use and developing long-term stewardship programs in community pharmacy settings. By highlighting practical interventions and policy priorities, this research aims to strengthen AMS implementation in Ghana, contribute to reducing AMR, and inform future strategies in similar low-resource contexts.

Launching e- and q-commerce pharmacies in low-socioeconomic countries, highlighting access, affordability, regulation, logistics, and technology as critical success determinants

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Background: Ensuring equitable access to safe, affordable, and quality medicines remains a persistent challenge within Pakistan's healthcare system, particularly for low socio-economic populations. Structural barriers include uneven distribution of licensed pharmacies, inadequate pharmacist presence at the point of care, fragmented pharmaceutical supply chains, and inconsistent regulatory enforcement. These limitations are further exacerbated by rapid urbanisation, population growth, and a rising burden of chronic diseases. Simultaneously, increasing smartphone penetration, digital payment adoption, and expansion of technology-enabled retail platforms have created

opportunities for alternative medicine delivery models. E-commerce pharmacy facilitates online ordering with scheduled home delivery, while quick-commerce (q-commerce) pharmacy enables rapid fulfilment through hyperlocal fulfilment centres. This review examines implementation-specific considerations for launching regulated, pharmacist-led e-commerce and q-commerce pharmacy models in Pakistan, with emphasis on operational feasibility, patient safety, affordability, and scalability within low socio-economic settings.

Method: An implementation-focused narrative review was conducted using contextual analysis of Pakistan's pharmaceutical regulatory framework, community pharmacy landscape, and digital commerce ecosystem. Operational insights were informed by existing digital retail, logistics, and pharmacy service models operating across urban and semi-urban regions. Core implementation domains included regulatory alignment, pharmacist integration, prescription validation processes, inventory and cold-chain management, last-mile delivery models, affordability strategies, and patient engagement mechanisms. Comparative assessment was undertaken between traditional brick-and-mortar pharmacy services and digital pharmacy models to identify implementation enablers, operational risks, and context-specific adaptations relevant to Pakistan.

Results: The analysis demonstrates that e-commerce pharmacy models can substantially improve access to essential medicines by reducing geographic barriers, travel costs, and service delays, particularly for patients requiring long-term pharmacotherapy. Q-commerce pharmacy models show strong applicability in densely populated urban environments by addressing urgent medication needs through rapid delivery. Successful implementation depends on alignment with provincial drug regulatory authorities, mandatory pharmacist oversight for dispensing, and robust digital prescription validation to minimise misuse of prescription-only medicines. Integration of licensed pharmacists into digital platforms enables remote counselling, medication reconciliation, and adverse drug reaction reporting. Maintaining supply chain integrity through batch traceability, expiry monitoring, and temperature-controlled storage emerged as a critical operational requirement. Affordability was enhanced through promotion of generic medicines, transparent digital pricing, and strategic partnerships with corporate health programmes and welfare initiatives. Key challenges identified included variability in regulatory enforcement, limited digital health literacy among low-income populations, infrastructure constraints in informal settlements, and increased operational complexity associated with last-mile delivery.

Conclusion: E-commerce and q-commerce pharmacy models represent a viable and scalable approach to strengthening pharmaceutical access in Pakistan when implemented within a pharmacist-centred, regulation-compliant framework. Sustainable adoption requires coordinated regulatory oversight, workforce capacity development, patient education, and resilient logistics systems. Contextualised

implementation of these models has the potential to improve medication safety, continuity of care, and health equity for Pakistan's low socio-economic populations.

Expanding role of community pharmacies in medication error reporting: Evidence from the Korean patient safety reporting and learning system

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Background: Korea established a national patient safety management framework following the enactment of the Patient Safety Act in 2015. A key component of this framework is the Korea Patient Safety Reporting and Learning System (KOPS), which collects voluntary reports of patient safety incidents from healthcare institutions, healthcare professionals, patients, and caregivers. The system supports patient safety improvement through analysis of incident patterns, identification of root causes, and implementation of preventive measures based on a "learning from error" approach. To promote nationwide reporting and learning activities, the government operates a Central Patient Safety Center and several Regional Patient Safety Centers. The Korean Pharmaceutical Association participates as a Regional Patient Safety Center representing community pharmacies.

Method: This study conducted a descriptive analysis of reporting trends in the national patient safety reporting and learning system. Annual reports published by the Central Patient Safety Center were reviewed, together with patient safety incident reports submitted by community pharmacies through the KPA SafePharm system operated by the Korean Pharmaceutical Association, which are subsequently integrated into the national reporting system. The analysis focused particularly on medication error reports.

Results: The Korea Patient Safety Reporting and Learning System recorded 563 reports in 2016, increasing rapidly to 22,118 reports in 2024. Falls were the most frequently reported incidents between 2016 and 2021, accounting for approximately half of all reports. However, medication errors increased steadily over time and became the most frequently reported incident type beginning in 2022. Medication errors accounted for 49.8% of all reports in 2023 and 50.9% in 2024. This increase was largely driven by reports from community pharmacies. Reports from community pharmacies exceeded 2,000 cases in 2019 and increased substantially after the Korean Pharmaceutical Association was designated as a Regional Patient Safety Center in 2021. The number of reports rose to 4,312 in 2022, 8,072 in 2023, and 10,280 in 2024, accounting for 91.3% of all medication error reports in 2024.

Conclusion: These findings highlight the expanding role of community pharmacies in medication error reporting within the national patient safety reporting and learning system in Korea. Continued policy support, including appropriate reimbursement mechanisms and sustained reporting initiatives, will be important to strengthen and maintain the participation of community pharmacies in patient safety activities.

Patient safety and medication error reporting in community pharmacies: Results of a national survey of pharmacists in South Korea

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Background: Medication errors are among the most common patient safety incidents worldwide. A study conducted in the United Kingdom estimated that approximately 237 million medication errors occur annually. Because medications are most frequently used in outpatient settings, community pharmacies play a critical role in ensuring safe medication use. Most prescription medicines, over-the-counter (OTC) products, and similar health supplements are dispensed and managed through community pharmacies. However, patient safety policies in many countries, including South Korea, have primarily focused on hospitals, while relatively limited attention has been given to community pharmacies, which are smaller and widely dispersed. Understanding pharmacists' awareness, experiences, and reporting behaviors regarding medication errors is therefore essential for strengthening patient safety in outpatient care.

Objective: This study examined community pharmacists' awareness and experiences related to patient safety and medication errors. It also explored barriers to incident reporting and identified policy priorities to improve reporting practices and strengthen patient safety activities in community pharmacy settings.

Method: A nationwide survey was conducted among approximately 1,000 community pharmacists affiliated with the Korean Pharmaceutical Association. The questionnaire was administered through the Google platform over nine days beginning on June 13, 2024. Descriptive statistical analysis was used to examine pharmacists' awareness of patient safety concepts, experiences with medication errors and near misses, reporting practices, and perspectives on policy measures to improve patient safety in community pharmacies.

Results: A total of 993 responses were analyzed. The proportions of respondents who reported familiarity with patient safety incidents, medication errors, and near misses were 62.1%, 61.7%, and 51.0%, respectively, indicating

relatively lower awareness of near misses. Medication error experiences were reported by 74.2% of respondents, and 87.9% had experienced near misses. However, among those who experienced medication errors, only 24.4% reported them. Prescribing errors were identified by 94.5% of pharmacists, but only 31.4% reported these incidents. Dispensing errors occurring in pharmacies were experienced by 90.4% of respondents, yet only 15.4% reported them. In addition, 64.0% reported identifying medication-use errors at the patient administration stage, whereas only 10.1% reported these incidents. Regarding the causes of dispensing errors, respondents identified staff carelessness (64.8%), medication-related factors such as look-alike or confusing drug characteristics (39.3%), staff shortages or excessive workload (28.1%), insufficient knowledge or skills (26.1%), and equipment malfunction (20.7%). Errors caused by incorrect manual data entry (69.2%) were reported more frequently than those related to barcode systems (27.2%) or scanners (16.9%).

Conclusion: Community pharmacists frequently encounter prescribing and dispensing errors, yet reporting remains limited. Reporting was most common for prescribing errors, followed by dispensing errors and patient medication-use errors, suggesting that safety events occurring within pharmacies and during medication use are substantially underreported. Strengthening patient safety education, improving pharmacy safety systems, and implementing supportive government policies—such as reimbursement for patient safety reporting and financial support for pharmacy practice environments—will be important to enhance medication safety in community pharmacy practice.

Cannabidiol Use in recreational athletes: Awareness, utilization, and perceived benefits

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Background: Cannabidiol (CBD), a non-psychoactive compound derived from cannabis, has gained popularity among athletes for its potential analgesic, anti-inflammatory, anxiolytic, and sleep-enhancing properties. While prior studies in elite athletes (e.g., rugby players) suggest perceived benefits in recovery and pain management, limited data exist on recreational athletes. This study aimed to evaluate CBD use, perceived effectiveness, and knowledge among recreational athletes in Los Angeles County, expanding on prior work with a larger sample size.

Method: A cross-sectional, anonymous survey was distributed via QR-coded flyers at athletic facilities and CBD dispensaries. Eligible participants were recreational athletes aged 18–65 who had exercised consistently for at least three

months. The Qualtrics-based survey, adapted from prior UK research, assessed CBD awareness, usage patterns, perceived benefits, and concerns. A total of 65 complete responses were analyzed using descriptive statistics.

Results: Among participants (n=65), 92.3% reported awareness of CBD and its potential benefits. CBD usage varied: 24.6% reported current use, 32.3% past use, and 40.0% had never used CBD. Over half of respondents (55.4%) reported perceived positive effects, including pain relief, reduced anxiety, improved sleep, and enhanced recovery. Common reasons for use included musculoskeletal pain and stress-related symptoms. Among non-users, primary reasons included lack of perceived need and limited knowledge of benefits, with minimal concern for anti-doping violations. Reported formulations included inhaled, ingestible (gummies, capsules, liquids), and topical products.

Conclusion: Recreational athletes demonstrate high awareness and moderate utilization of CBD, with a majority of users reporting perceived benefits in pain management, recovery, and psychological well-being. Compared to elite athlete data, this population appears less concerned about regulatory risks and more open to CBD as an alternative to traditional pain management strategies. However, findings are limited by self-reported data, lack of control for confounding variables (e.g., concurrent therapies, lifestyle factors), and regional sampling. Further controlled studies are warranted to evaluate the efficacy and safety of CBD relative to standard pharmacologic and non-pharmacologic interventions.

From awareness to vaccination: Targeted marketing increases private-pay vaccination uptake in Danish community pharmacies

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Background: Community pharmacies are well positioned to increase vaccination uptake and contribute to population immunity. In Denmark, private-pay pharmacy vaccinations are organised through APOVAC, a national association of 174 community pharmacies providing infrastructure, training and quality assurance. Vaccinations are categorised into preventive, e.g. TBE, herpes zoster, HPV, RSV, pneumococcal, diphtheria/tetanus (Group 1), travel (Groups 2 & 3) and seasonal influenza vaccines. In July 2024, two pharmacy licences in the Central Denmark Region merged, forming Firkløver Apoteket, enabling coordinated marketing strategies across sites.

Objective: To evaluate the impact of targeted multi-channel marketing activities on the uptake of private-pay vaccinations in across different pharmacy settings and vaccine categories.

Method: A retrospective observational study was conducted using routinely collected vaccination data from the APOVAC management system (July 2024–July 2026), organised by month, pharmacy location and vaccine category. Following the merger, coordinated marketing initiatives were introduced, including in-pharmacy materials, social media communication, educational activities and enhanced staff counselling regarding vaccination services. Vaccination volumes before and after implementation were analysed descriptively; influenza vaccinations were analysed separately.

Results: A total of 1,106 private-pay vaccinations were administered between July 2024 and February 2026 (Søndergade: n=529; Brødstrup: n=347; Bankager branch during influenza season: n=230). Data collection is ongoing and results up to and including July 2026 will be presented in the poster. At Brødstrup, where systematic social media promotion was introduced in early 2025, mean monthly non-influenza vaccinations increased from 0 to 10.8 per month. At Søndergade, the increase was from 13.9 to 15.8 per month (+14%). Travel vaccine uptake at Brødstrup rose sharply from January 2026, with 14 doses in January–February 2026 alone, exceeding the preceding eleven months. A peak in October 2025 coincided with a national APOVAC social media campaign.

Conclusion: Targeted multi-channel marketing was associated with increased private-pay vaccination uptake. The largest relative effect was observed where vaccination services were newly introduced, and growing travel vaccine uptake suggests sustained impact. Community pharmacies represent an accessible platform for expanding vaccination coverage and strengthening population immunity.

Three seasons that changed the shot! Influenza vaccination in Belgian community pharmacies: Expanding access and increasing uptake

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Background: Increasing influenza vaccination coverage remains a public health priority, particularly among older adults and medically vulnerable populations. However, traditional appointment based vaccination pathways do not reach all target groups equally. In Belgium, community pharmacists expanded their scope of practice to include vaccination during the COVID19 pandemic in 2022, followed by influenza vaccination from the 2023–2024 season

onwards. This stepwise expansion provides a unique opportunity to assess the early public health impact of pharmacist administered vaccination on accessibility and overall uptake.

Objective: To describe the evolution and public health impact of pharmacist administered influenza vaccination in Belgium over three consecutive seasons, with a focus on vaccination uptake, population reach and the complementary role of community pharmacies in improving access to vaccination in addition to traditional healthcare settings.

Method: This analysis used administratively validated reimbursement data on influenza vaccines dispensed and administered in Belgian community pharmacies across three influenza seasons, complemented by national dispensing trends. Vaccination volumes, the proportion administered in pharmacies and age specific patterns were analyzed to assess changes in uptake and population reach.

Results: Over three seasons, influenza vaccination services were progressively embedded into routine community pharmacy practice, reaching availability in more than 84% of Belgian pharmacies by the 2025–2026 season. During that season, nearly 1.9 million reimbursed influenza vaccines were dispensed nationwide, reflecting a structurally higher vaccination level. After a plateau in the immediate-postCOVID-years, the integration of vaccination into community pharmacies was associated with a renewed increase in overall uptake of approximately 5% in the most recent season. In 2025–2026, 669,378 influenza vaccinations were administered directly in community pharmacies, representing 35.4% of all pharmacy dispensed influenza vaccines. Older adults (≥65 years) accounted for the largest absolute volumes, consistent with national recommendations. Importantly, age specific analyses showed that among younger, working age adults eligible for vaccination due to medical risk factors, more than half of vaccines obtained through pharmacies were administered on site. This highlights how low-threshold, appointment-free access and extended opening hours in community pharmacies better accommodate the practical constraints of working-age adults than traditional general practitioner focused preventive care.

Conclusion: Three seasons of influenza vaccination in Belgian community pharmacies demonstrate that embedding vaccination into everyday pharmaceutical care can increase accessibility, improve equity and contribute to higher vaccination uptake at population level. By acting as a complementary vaccinator, the community pharmacist strengthens primary care capacity and helps reach populations that might otherwise remain unvaccinated. This experience provides transferable insights for countries seeking to expand prevention through accessible, patient-centered vaccination models.

From pack to treatment: A new remuneration model for community pharmacists in antimicrobial stewardship in Belgium

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Background: Antimicrobial resistance (AMR) is a critical global health threat and a key priority of the Belgian Healthcare system. As highly accessible medicines experts, pharmacists are uniquely positioned to contribute to antimicrobial stewardship (AMS). The upcoming obligation to dispense antibiotics per unit, and thus no longer per pack, offers a strategic opportunity to strengthen the role of community pharmacists in AMS. However, unit-based dispensing will only contribute to reducing AMR if it is part of a broad strategy that leverages community pharmacists' full capabilities. Objectives: To present a treatment-based remuneration model for antibiotic dispensing in community pharmacies, designed to support AMS

Method: Thorough policy discussions were conducted between representatives of community pharmacists and health authorities to align the challenge of the inherent additional professional and technical workload of unit dispensing with a appropriate remuneration framework. In parallel, essential baseline conditions were defined to ensure safe implementation and meaningful impact on AMR.

Results: Dispensing antibiotics on a per unit basis, rather than through predefined and strictly regulated pack sizes, introduces additional professional and technical tasks for community pharmacists, who continue to bear full professional responsibility for ensuring concordance with the therapeutic intentions of the prescriber and for guaranteeing that patients clearly comprehend their treatment regimen. Consequently, the shift toward unit based dispensing of antibiotics is governed by a structured remuneration framework designed to safeguard both the quality and long term sustainability of pharmaceutical care. This framework links remuneration directly to the treatment and consists of three core components: (1) a base fee for the mandatory pharmaceutical care, applicable regardless of treatment length (with a ceiling of one per month) and independent of pack size; (2) the unit based reimbursement of the prescribed specialty; and (3) an additional fixed technical fee, which is only applicable when no adequate package size or combination exists. Importantly, this technical fee is intended to support national health system objectives and not to function as a cost containment or volume-driven incentive. Internal compensatory mechanisms- such as the reduction in the number of basic fees- which are no longer linked to dispensing a pack but rather to initiating a treatment help ensure financial equilibrium within the sector without undermining the availability or quality of community pharmacy services. However, the implementation of unit

based dispensing will only contribute meaningfully to AMR reduction if it is embedded within a broader AMS framework. Where delivery per treatment is supported by high quality prescribing practices, including the implementation and mandatory follow-up of prescribing guidelines. Prescriptions must be issued using the active substance and must clearly indicate the posology, treatment duration, and therapeutic intention.

Conclusion: Pharmacists play a pivotal role in the global response to antimicrobial resistance. The integration of unit based dispensing into routine practice represents a promising strategy to reinforce antimicrobial stewardship. To maximize its impact, pharmacists should be fully embedded within a comprehensive AMS framework, with appropriate recognition of their professional expertise and their expanding contributions to vaccination, point of care testing, and patient education.

Quality indicators for pharmacist-led COPD follow up: A RAND modified Delphi method

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Background: Chronic obstructive pulmonary disease (COPD) is the third leading cause of death worldwide and is a progressive chronic condition associated with high morbidity, reduced quality of life, and substantial healthcare utilization. Improving the care for people living with COPD is therefore a key priority in primary care. Quality indicators combined with audit and feedback have been identified as effective quality-improvement strategies that support practice change. The objective of this study was to develop a content-validated and extractable from pharmaceutical record set of quality indicators to support proactive, population-based pharmacist care for people living with COPD in Belgium.

Method: A RAND modified Delphi study with 3 rounds was conducted. Recommendations were extracted from international COPD guidelines and translated into candidate quality indicators, mapped to five predefined domains: diagnosis and assessment, prevention, pharmacological therapy, non-pharmacological therapy and referral, care coordination and care network. A multidisciplinary Belgian expert panel (N = 18), comprising community pharmacists, general practitioners, pneumologists, academics, and patient representatives with COPD assessed each indicator for relevance, appropriateness, and priority. In a first Delphi

round median Likert scale scores, prioritisation rates, and levels of agreement informed a preliminary classification via an online survey. The results were discussed in a second Delphi round during an online consensus meeting, followed by a final validation round via e-mail.

Results: In total, 73 candidate indicators were formulated according to the SMART principle and evaluated, resulting in a final selection of 16 priority indicators based on panel consensus and prioritization. These 16 indicators are currently being tested on their extractability from the pharmaceutical record. The selected indicators primarily addressed screening, assessment of adherence and inhaler technique, smoking cessation support, as well as prevention of complications through vaccination.

Conclusion: This study resulted in a prioritized set of 16 content validated quality indicators to assess pharmacist provided care for people living with COPD in Belgium. These quality indicators will be used to develop a COPD dashboard for pharmacists through which additional indicator features such as feasibility, reliability and acceptability in daily practice will be tested. This dashboard aims to provide pharmacists with structured insights into their COPD care strategies through automated audit and feedback, thereby supporting pro-active pharmaceutical care and targeted quality-improvement initiatives aligned with evidence-based COPD management in primary care.

Improving quality and measurable impact of a community pharmacist service through stricter criteria and digitalisation

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Background: Since 2017, the “Reference Pharmacist”, a structured community pharmacist service has been implemented nationwide in Belgium, formally recognising and remunerating pharmacists’ expertise in medication management and patient guidance. This service includes the creation and maintenance of a medication plan. At the start of 2026, the service underwent a major transformation aimed at improving quality and demonstrable impact. Inclusion criteria were tightened, pharmacy software was updated with compliance-blocking controls, digital signing was introduced, and transparency towards patients and other healthcare providers was strengthened. These changes were designed to improve service quality and to generate robust data supporting its added value.

Objective: The objective of this transformation is to enhance the quality of the community pharmacist service while

simultaneously enabling the collection of reliable data to substantiate its clinical and organisational impact.

Method: Previously, patients were eligible for the service if they had received at least five reimbursed medicines from the same pharmacy in the preceding year, including at least one chronic medicine (≥ 160 defined daily doses). As of 2026, eligibility criteria were refined to require a minimum of two chronic medicines, allowing better targeting of patients with greater care needs. Whereas pharmacists were previously required to create and maintain only a local medication plan, they are now obliged to digitally share this plan with both the patient and the patient’s healthcare providers. The shared medication plan must be updated whenever the patient’s therapy is modified and at least once every 12 months. With each initiation or yearly renewal of the service, an automatic digital notification is generated and shared with the patient and healthcare providers via federal digital portals. In addition, service agreements now require either electronic identity card (eID) authentication or digital signing using the eID. These digital agreements are also shared through the same platforms.

Results: Following the introduction of stricter inclusion criteria, approximately 750,000 community reference pharmacist patients were registered in January and February 2026, compared with one million during the same period in the previous year. For each registered patient, a digital notification and a medication plan were shared with the patient and their healthcare providers. This resulted in a more than fivefold increase in the number of medication plans shared digitally compared with the same period last year. This improvement has clear relevance for patient safety, particularly in emergency situations. Although digital signing is not yet available to all pharmacists, it is already being adopted where possible, reducing administrative burden and supporting a future-oriented pharmacy practice.

Conclusion: Stricter inclusion criteria lead to a logical reduction in patient numbers; however, all remaining patients fully meet the service requirements and have an up-to-date medication plan that is digitally shared. Enhanced transparency through digital notifications and shared medication plans supports patient empowerment, multidisciplinary collaboration, and safer medication use.

Patient and healthcare provider access to the Belgian shared pharmaceutical record: Utilisation, benefits, and barriers

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Background: Since 2014, each time a patient visits a pharmacy in Belgium, key dispensing data—including patient identity, the code of the dispensed medicinal product, dispensing date, quantity dispensed, and posology—have been recorded in the Shared Pharmaceutical Record. FarmaFlux manages this record and ensures that Belgian pharmacists can share and consult dispensing data in a secure, standardized, and high-quality manner, subject to patient consent. Nearly all Belgian pharmacies (99.87%) are connected to the Shared Pharmaceutical Record. The system contributes to improved quality of care by supporting continuity of care and enabling the detection of medication misuse and potential drug–drug interactions. Since March 2025, patients and their healthcare providers with an established therapeutic relationship have also been granted access to dispensing data covering the previous 12 months.

Objective: This evaluation aims to describe the implementation and use of patient and healthcare provider access to the Shared Pharmaceutical Record, and to assess early utilisation patterns and barriers to uptake.

Method: Patients can consult their dispensing history via the Belgian government portal following secure authentication using their electronic identity card and PIN or the itsme® digital identity. Healthcare providers (general practitioners, medical specialists, dentists, ...) access the dispensing history through a dedicated healthcare professional platform after authentication and patient selection.

Results: In the 12 months following the rollout of access for patients and healthcare providers, the dispensing history was consulted more than 3 million times for over 1.4 million unique individuals. A clear upward trend in the number of consultations was observed. Most consultations were performed via the web portal, with a smaller share via the mobile application (10.72%). The vast majority of requests were initiated by patients themselves (95.18%) or by their parents or legal representatives (4.68%). Consultations initiated by healthcare providers other than community pharmacists remained very limited. Access for hospital healthcare professionals is currently suboptimal, as the access control matrix is not yet fully operational. In addition, the consultation platform is not integrated into healthcare providers' existing software systems, representing a significant barrier to uptake and use.

Conclusion: Providing patients and healthcare providers with access to the dispensing history represents significant added value for comprehensive patient care. Usage data demonstrate strong patient engagement with government digital health platforms. In contrast, healthcare provider uptake remains limited due to organizational and technical barriers, highlighting the need for targeted actions to support integration into clinical practice.

Adapting the FIP Global Competency Framework v2 to strengthen the structure of community Pharmacy internships in Botswana

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Background: Approximately 1000 more registered pharmacists are required to address the healthcare needs of Botswana's population. Prior to 2017, Botswana did not have any schools of pharmacy. Pharmacists who trained/came from outside the country were required to complete a one-year internship that included practice in various pharmacy settings and pharmacy-related content education (guided by the Botswana Health Professions Council (BHPC) regulations and taught by preceptors). The interns, typically totaling 5-10 per year, were managed by the Ministry of Health (MoH). By 2017-2018, two schools had emerged in Botswana (one private school and one public: University of Botswana, UB) and were soon graduating ~100 pharmacists per year. The MoH integrated the first cohort of graduates from UB into existing internships, and subsequently into pharmacist positions (at the time, the private school graduates had not sat for the required BHPC pre-registration examinations). However, further funding from the government was unable to support subsequent internship cohorts. To increase the number of internship sites, private-sector community pharmacies were recommended to fill gaps in training through community pharmacy internships (CPIs). Offering internships through the community pharmacies required standardization of the internship structure, processes and assessments. Faculty from UB, in collaboration with the Pharmacy Board of the BHPC, applied for and were awarded a Fulbright Specialist grant to sponsor a scholar who assisted in developing curricular and assessment structures for CPIs and to develop preceptor training material.

Objective: To share experiences on how to structure CPIs based on the FIP Global Competency Framework v2 based on the needs of community pharmacists in Botswana and to share ways of assessing the quality of CPIs based on a structured assessment tool.

Method: A survey was designed to assess barriers and opportunities to increasing CPIs and distributed to community pharmacists and other stakeholders (including

members of the MoH, professional organizations, pharmaceutical distributors, etc...) in Botswana. Existing pharmacist competencies were reviewed, and the Global Competency Framework v2 from FIP was chosen as the primary framework for the structure of CPIs. Minor changes were made to align with existing pharmacy practice in Botswana. An assessment tool was developed based on the competency statements to aid in evaluating the interns, and a separate tool was developed by the Fulbright scholar and the Botswana team to evaluate the CPI preceptors.

Results: Materials were reviewed at an in-person validation meeting with relevant stakeholders from Botswana to further refine the competencies and assessment tools while allowing for better alignment with the pharmacy community in Botswana. A separate program lead by the scholar provided a "Train-the-Trainer" workshop to help prepare current, experienced community pharmacy preceptors to train future preceptors to start accepting interns.

Conclusion: The BHPC intends to absorb the recommendations from the scholar and UB team and transform necessary changes into regulations that intend to provide oversight for the CPIs. Future projects based on this Fulbright Specialist Grant experience include establishing a continuing professional development policy/requirement for pharmacists and developing accreditation standards for pharmacy education in Botswana.

Addressing vaccine hesitancy and increasing vaccination uptake through a service-learning wellness initiative in community pharmacies

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Background: Vaccine-hesitancy is increasing in society due to declining trust in vaccine safety, efficacy and the healthcare system that delivers them, along with heightened complacency about the prevalence and seriousness of vaccine-preventable diseases. Vaccine myths and misconceptions about the diseases they prevent are exacerbated by mis- and disinformation. The location of community pharmacies and societal trust in pharmacists make them ideally situated to address vaccine hesitancy, particularly in areas with a high social vulnerability index (SVI). Student-pharmacists can add value to this public health concern through Service Learning, a form of experiential education where students engage in activities that address community needs with structured opportunities intentionally designed to promote learning and development. The primary objective was to assess the impact on improving vaccination rates and addressing vaccine hesitancy by providing

accessible, evidence based information through a service-learning experience (SLE) in community pharmacies. The secondary objective was to assess student-pharmacist perspectives on the community pharmacist's role in public health initiatives (PHI).

Method: Second year student-pharmacists engaged in a SLE once weekly over a period of 6 weeks during influenza season at 9 supermarket community pharmacies during the 2024 and 2025 semesters. Students attend one SLE where they engaged with consumers to provide vaccine education and promote vaccine administration. To prepare for this experience, students attended a 50-minute lecture on vaccination as a PHI, reviewed local vaccination rate data, and were reintroduced to motivational interviewing. Immediately upon SLE completion, students self-reported the following vaccination-related metrics: number of patient conversations, vaccination appointments scheduled, and vaccines administered. Further, if vaccine hesitancy was encountered the nature of that interaction was documented. Student perspectives were collected through an open-ended question. The type of vaccine hesitancy and perspectives were independently categorized by two investigators; discrepancies were resolved through discussion. Descriptive statistics and Chi-square were used for analysis.

Results: A total of 227 student-pharmacists completed a SLE. Students reported 4267 vaccine-related conversations and scheduled 318 vaccine appointments resulting in the administration of 535 vaccines (12.5% success rate) for influenza (n=341), Covid-19 (n=151), herpes zoster (n=21), pneumococcus (n=12), and respiratory syncytial virus (n=10). Vaccine acceptance rate was higher in communities with a low/low-medium SVI compared to those with a high/medium-high SVI (19.9% vs. 7.2%, p<.0001). Most students (n=158 (69.6%)) reported encountering vaccine hesitancy. Vaccine hesitancy was more commonly experienced in pharmacies serving patients with medium-high/high SVI compared to those with low/low medium SVI (81.1% SLEs v. 66.3% SLEs, p<.05). Vaccine hesitancy pertained to confidence in safety/efficacy (46.2%), complacency (12.9%), convenience (4.3%), while 36.5% were undetermined. Students agreed the SLE improved their understanding of pharmacists' roles in PHI (82%). Perceived pharmacists' roles in PHI included education (25%), community health engagement (23%), accessibility (17%), and immunization support (16%).

Conclusion: A community pharmacy-based SLE increased engagement in vaccine education and contributed to vaccination uptake. Integrating SLEs in pharmacies may help address vaccine hesitancy while preparing student pharmacists to support PHI. Future research should centre on how student-pharmacists can best mitigate vaccine hesitancy to improve vaccine uptake.

Developing a structured counselling service for nutritional supplements in community pharmacies: A pilot project from Glostrup Community Pharmacy

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Background: Patients with disease-related malnutrition often receive nutritional supplements as part of their treatment. In Denmark, this is supported by a nutritional prescription, a scheme that authorises reimbursement for these products. Correct use is essential for achieving the intended effect, yet there is currently no structured counselling service for this patient group in community pharmacies. Prescribers, including doctors and dietitians, often have limited time for detailed guidance, leaving patients without sufficient support. Community pharmacies already have strong experience with structured consultations through the New Medicine Service (NMS), which helps patients start new medication and improves adherence. Building on this proven model, we aim to develop a similar approach for nutritional supplements. The aim is to design a standardised counselling service for patients using nutritional supplements, inspired by the NMS model, with a focus on improving understanding and compliance.

Method: The project will include three main steps: 1. Development of a structured counselling framework and documentation process. 2. Competence building for pharmacists, pharmacy technicians, and students through targeted training. 3. Pilot implementation with evaluation of patient satisfaction and perceived impact.

Results: The project will be carried out from March to June 2025. Final results will be presented at the congress. Expected outcome: The service is expected to strengthen the pharmacy's role as a healthcare partner, improve patient understanding and compliance, and provide prescribers with a trusted referral option for patients requiring nutritional support.

Conclusion: Introducing a structured counselling service for nutritional supplements in community pharmacies has the potential to enhance patient care and foster collaboration between pharmacies and prescribers.

A comparison of two countries: Pharmacist-prescribed contraception in Australia and the United States

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Background: Access to contraception is a critical factor in achieving Sustainable Development Goals 3, 5, and 10, which focus on ensuring healthy lives and achieving wellbeing for all ages, achieving gender equality and empowering all women and girls, and reducing inequalities within and among countries, respectively. Contraception access, however, is a barrier for many women and girls. Pharmacists are viewed by the World Health Organization as an access point for contraception. Australia and the United States are examples of developed countries with policies permitting pharmacists to prescribe contraception, with varied approaches across their States and Territories. There is a lack of comparative analysis between countries with similar healthcare profiles but different regulatory pathways. This study addresses that gap by examining the implementation models of Australia and the United States.

Objective: To present the similarities and differences between pharmacist-prescribed contraception in Australia and the United States.

Method: In both countries, a State/Territory-level approach was used to expand pharmacists' role in providing contraception. A narrative review of current legislation, state-based protocols, and professional pharmacy guidelines (2013–mid 2026) was conducted for both Australia and the United States. Data points for comparison included: prescribing authority, mandatory training requirements, types of contraception included, and reimbursement models. The data were synthesised to identify best practices and barriers to clinical implementation in community pharmacy settings.

Results: Both countries utilise state/territory-based policies; the scope and policy specifics vary significantly. Approximately 40 states in the United States permit, or are in the process of permitting, pharmacists to prescribe contraception. In Australia, policies have varied in each State and Territory; some states permit pharmacists to initiate contraception, while others only permit pharmacists to issue a resupply of contraception. For both countries, the types of contraception that pharmacists may prescribe also vary by State/Territory. Key challenges include payment for the

service, as pharmacists are not consistently reimbursed for consultations; workflow considerations with expanding scope, out-of-pocket patient co-payments, and pharmacist education and record-keeping requirements.

Conclusion: Pharmacist-prescribed contraception is a tool to expand contraception access. Barriers include payment structures and policy variability. In both countries, there is a need for national policy harmonisation.

Mental health care in Australian rural and remote community pharmacy: Do consumers and pharmacists agree?

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Background: Access to timely and effective mental health care remains a persistent challenge across Australia. While nearly half of all Australians are expected to experience a mental condition during their lifetime, individuals living in non-metropolitan regions frequently face reduced access to appropriate care. This disparity in access is influenced by a range of structural and contextual factors, including workforce shortages, geographic isolation, long wait times, and ongoing stigma surrounding mental illness. Community pharmacists are well-positioned to contribute to mental health care in these under-served regions, due to their accessibility and frequent contact with the public. In many rural and remote areas of Australia, pharmacists are among the most consistently available healthcare professionals and form a vital part of the local health infrastructure. Although pharmacist-led mental health initiatives internationally have yielded promising outcomes, the integration of pharmacists into mental health services in Australia remains limited. The purpose of this study was therefore to explore the pharmacist's role in providing mental health care in Australian rural and remote communities from the perspective of both pharmacists and consumers.

Method: Semi-structured interviews were conducted with consumers and pharmacists living in Australian rural and remote northwest Queensland communities. Data were analysed using a hybrid approach that combined inductive and deductive coding. An initial inductive analysis was performed to identify emerging themes and unanticipated insights across the transcripts. This was followed by deductive coding, whereby interview content was mapped against the constructs of the Consolidated Framework for Implementation Research.

Results: Thirty-eight interviews were conducted: 11 with rural and remote community pharmacists and 27 with community pharmacy consumers. Over half of the pharmacists had been registered for greater than 10 years, with approximately one-third having 5–10 years' experience practicing in a rural or remote location. The most common consumer age group was 18–29 years (26%), with 74% identifying as female. Both pharmacists and consumers rated the prevalence of mental health on a 1–10 scale, with mean scores of 8 and 7.5 respectively. Five themes were identified shaping the feasibility of mental health service delivery in rural and remote community pharmacies. Both pharmacists and consumers emphasised accessibility, trust and established relationships as facilitators, positioning pharmacies as potential first points of contact for mental health concerns. Adaptability emerged as critical, with services needing to reflect local community needs rather than replicating metropolitan models. Privacy and confidentiality were highlighted as essential, with consumers particularly concerned about stigma in small towns. Barriers included workforce shortages, time pressures, insufficient training and the lack of appropriate consultation spaces. Pharmacists also raised issues of role boundaries and financial sustainability, while consumers stressed affordability and cultural safety. Both groups underscored the importance of collaboration with general practitioners and mental health services, alongside adequate training and support to ensure integration and legitimacy of pharmacy-based mental health services.

Conclusion: Community pharmacies in rural and remote Australia were found to be well positioned to contribute to mental health care, but sustainable integration requires adaptable service models, adequate resources and strengthened inter-professional collaboration.

Strengthening primary care through clinical pharmacists: The "Family Pharmacist" model

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Background: Health systems are facing increasing pressure due to population ageing, the growing burden of chronic diseases, and healthcare workforce shortages. Strengthening primary care and optimising medicines use have therefore become strategic priorities for ensuring health system sustainability and resilience. In Portugal, despite recent

improvements, approximately 1.5 million citizens remain without an assigned family physician within the National Health Service (Serviço Nacional de Saúde – SNS). This gap highlights the need for innovative models improving continuity of care and access to medication-related services. The concept of the “family pharmacist” has emerged as a strategy to strengthen multidisciplinary practice by integrating clinical pharmacists into primary care and community-based healthcare services. International experience demonstrates that pharmacists working within primary care teams can improve treatment outcomes, enhance patient safety, mitigate healthcare workforce shortages, and promote person-centred integrated care pathways. This study analysed the potential contribution of clinical pharmacists acting as “family pharmacists” within the Portuguese healthcare system and explored how expanding pharmaceutical services may strengthen primary care capacity.

Method: A narrative policy analysis was conducted to examine the potential integration of clinical pharmacists within primary care and community-based healthcare systems. The analysis reviewed international policy frameworks, institutional guidance, and documented models involving pharmacist-led services. Sources included reports from professional organisations, governmental bodies, and healthcare systems, as well as documented examples of pharmacist integration in primary care settings across Europe, Canada, and Australia. The services analysed included medication review programmes, chronic prescription renewal, pharmacist-led management of common health conditions, dispensing of high-cost medicines in community settings, and pharmacist participation in home-based care services. The Portuguese healthcare context was examined in parallel, including recent developments in pharmaceutical services, workforce constraints, and policy initiatives to expand access to primary care. Particular attention was given to digital health infrastructure and the emerging European Health Data Space, expected to facilitate interoperability of health data across European healthcare systems.

Results: International evidence consistently indicates that integrating clinical pharmacists into multidisciplinary primary care teams improves medication safety, enhances therapeutic adherence, and contributes to efficient use of healthcare resources. In several European countries, structured pharmaceutical services such as medication reviews, chronic prescription renewal, and pharmacist-led management of minor ailments are already implemented and publicly remunerated. Programmes such as the “Pharmacy First” initiative in the United Kingdom demonstrate pharmacists’ capacity to manage common health conditions, reducing pressure on primary care consultations and emergency departments. In Canada and other jurisdictions, pharmacists have prescribing authority for defined clinical situations, including prescription renewal, adaptation of existing therapies, and emergency prescribing. In Portugal, recent developments, including the introduction of chronic prescription renewal and pilot initiatives addressing minor

ailments, suggest a gradual expansion of pharmacist-led services.

Conclusion: Integrating clinical pharmacists as “family pharmacists” represents a promising strategy to strengthen primary care capacity and improve medicines optimisation in Portugal. By supporting medication management and collaborating with other healthcare professionals, pharmacists can contribute to safer, efficient healthcare delivery. Strengthening their role within primary care may improve access to medicines-related care while supporting sustainability and resilience of healthcare systems.

Strengthening medication counselling and adherence support in community pharmacies: A national initiative from Denmark

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Background: Community pharmacies play an important role in supporting patients’ safety and effective use of medicines. In Denmark, two nationally implemented cognitive pharmacy services support this role: The New Medicin Services (NMS) and Compliance Services (CS). These services aim to improve patients’ understanding of their treatment and strengthen medication adherence. However, uptake varies between pharmacies and regions. In the context of the Danish healthcare reform and the increasing role of pharmacies in primary care, strengthening and documenting the implementation of these services has become a national priority.

Objective: To strengthen the delivery of medication counselling and adherence support in Danish community pharmacies and monitor regional development in service activity.

Method: The Health Policy Committee of the Danish Association of Pharmacies initiated a national initiative to strengthen the implementation of NMS and CS services across Denmark. Activity data from the five Danish pharmacy regions were analyzed using national pharmacy data systems. Indicators included the number of services delivered, and the number of services per 1,000 prescriptions dispensed. Regional pharmacy representatives were appointed to facilitate engagement, share experiences, and encourage pharmacies to actively provide these services.

Results: Data from January 2024 to January 2026 demonstrate increasing activity in NMS across Denmark. In January 2024, regions delivered between 0.5 and 0.9 MS per 1,000 prescriptions. By January 2026, regions delivered between 0.9 and 1.8 MS per 1,000 prescriptions across the five regions. This is an increase of app. 50 %. January 2026 Regional variation was observed, with the highest activity in Region Hovedstaden (1.8 MS per 1,000 prescription packages) and lower levels in Region Syddanmark (0.9). Other regions reported intermediate levels: Region Sjælland (1.6), Region Midtjylland (1.1), and Region Nordjylland (1.0). CS were delivered less frequently but showed stable activity levels across regions. In January 2026, compliance services ranged from 0.2 to 0.6 services per 1,000 prescriptions.

Conclusion: A coordinated national initiative combining data monitoring, regional engagement and professional dialogue can support the implementation of medication counselling and adherence services in community pharmacies. The Danish experience demonstrates how structured collaboration and transparent data can strengthen the contribution of community pharmacies to medication safety and adherence. This initiative illustrates how community pharmacies can scale NMS and CS through national coordination, strengthening their role as accessible to healthcare providers within primary care systems. However, there is still room for improvement across the pharmacies in the regions.

Optimizing diabetes management through pharmacist-led continuous glucose monitoring: A comparison with traditional blood glucose monitoring

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Background: Diabetes mellitus is a major global health challenge, and effective glucose monitoring is essential for optimal disease management. Traditional blood glucose monitoring (BGM) relies on fingerstick blood sampling to measure glucose levels at specific time points. Although widely used due to its accessibility and affordability, BGM provides only intermittent data and may not adequately capture daily glycemic variability. Continuous glucose monitoring (CGM) has emerged as an advanced technology that provides real-time glucose readings and trend information. Pharmacists are increasingly involved in diabetes care, including patient education, medication optimization, and interpretation of glucose monitoring data.

Method: A literature-based comparative analysis was conducted to evaluate the differences between BGM and CGM in monitoring principles, data characteristics, and clinical outcomes. Published clinical studies were reviewed to

assess improvements in glycemic control associated with CGM use and the potential contribution of pharmacist-led patient support and education.

Results: CGM systems utilize subcutaneous sensors to continuously measure glucose concentrations in interstitial fluid, typically updating readings every five minutes and providing comprehensive 24-hour glucose profiles. Compared with BGM, CGM provides real-time alerts for hyperglycemia and hypoglycemia and allows patients to better understand glucose trends related to diet, physical activity, and medication use. Although CGM readings may exhibit a physiological delay of approximately 5–15 minutes compared with capillary blood glucose values, studies have demonstrated clinically meaningful benefits. Evidence suggests that CGM use can reduce HbA1c by approximately 0.5–1.0% and increase time-in-range (70–180 mg/dL) by 10–15%. (Beck et al., JAMA 2021; Battelino et al., Diabetes Care 2019) Pharmacist-led education and medication review further support effective CGM utilization and improve patient adherence to glucose monitoring.

Conclusion: CGM represents a significant advancement in glucose monitoring technology and supports more personalized diabetes management. While BGM remains important for confirming glucose values in certain situations, integrating CGM with pharmacist-led care may improve glycemic outcomes, patient engagement, and overall diabetes management.

Light therapy and nutritional guidance in patients receiving medical treatment for depression

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Background: Community pharmacies are increasingly recognized as accessible providers of mental-health-related services in primary care. Light therapy is widely used as a nonpharmacological option for seasonal depressive symptoms and is delivered either at home or at hospital settings. To our knowledge, no Danish community pharmacy currently offers structured light therapy, and such services would rely on out-of-pocket payment because light therapy is not prescribed by physicians in Denmark. Nutrition also plays a role in mental wellbeing through its influence on tryptophan metabolism and serotonin production, suggesting that nutritional guidance may serve as a complementary mental-health-related service for individuals living with depression. However, little is known about whether patients purchasing antidepressant medication perceive these services as relevant, acceptable or valuable in a pharmacy setting. This study aims to: Part 1: Assess patient interest in

pharmacy-based light therapy and nutritional guidance as mental-health-related services and quantify willingness to pay. Part 2: Establish a pharmacy-based light therapy service. Part 3: Evaluate the feasibility and acceptability of light therapy service at the pharmacy, among patients and among pharmacy staff.

Method: This multi-phase study is conducted at a community pharmacy in Northern Zealand, Denmark. Part 1: Patient survey: Consecutive customers purchasing medication for depression are invited to complete anonymous questionnaires. Over three weeks in February, patients are surveyed regarding interest in and willingness to pay for nutritional guidance as a mental-health-related service. Over two weeks in March 2026, a questionnaire explores interest in and willingness to pay for pharmacy based light therapy. Age and gender are recorded. Part 2: Service establishment: A light therapy service will be established for patients. A 10,000 LUX lamp will be located in a consultation room will be reserved for the treatment. Uptake is measured by counting the number of patients receiving treatment. Part 3: Service evaluation: Qualitative face-to-face interviews with both patients and pharmacy staff will explore experiences, perceived value and implementation needs of providing mental-health-related services in a community pharmacy context.

Results: The study is ongoing and these results will be presented at the conference: • the proportion of patients expressing interest in one or both mental-health-related services (light therapy and nutritional guidance), • descriptive distributions of willingness-to-pay, • early evaluation of the newly established light therapy service, • thematic insights from patients and staff regarding acceptability, barriers and opportunities for integrating mental-health-related services into pharmacy practice.

Conclusion: This study will generate early practice-based evidence on the demand, affordability and feasibility of mental-health-related services in community pharmacy. Findings may support future development of pharmacy-based mental health support models and strengthen the role of community pharmacies as accessible providers of patient-centred mental-health-related care.

Improved access to minor condition treatment through community pharmacy - Results of an experiment conducted in Southwest of France (2025)

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Background: Access to minor conditions treatment remains a major challenge, particularly in areas affected by medical shortages. Community pharmacists could play an enhanced role in managing these conditions.

Objective: The experiment aimed to confirm the ability of the community pharmacist and evaluate the feasibility of managing minor conditions through the dispensing of prescription-only medicines as part of an improved Community Pharmacy Care Pathway. Its impact on access to care has also been assessed.

Method: A coalition, made up of USPO, NereS and LEEM, tested this model in real-life for respiratory allergies in Gironde, Southwest of France in 2025. A clinical decision tree has been developed and validated by experts from the National Professional Council of Pharmacy. The experiment took place from April to September 2025 through the local interprofessional care system organisation of West Gironde. Seven pharmacies took part in the experiment, which relied on a practice agreement with several local General Practitioners and based on the clinical decision tree. Pharmacists have also received a dedicated training. Through this agreement, pharmacists have been able to treat patients and dispense prescription-only medicines when needed.

Results: In total, 115 patients have been treated, including 18 who had no registered General Practitioner. No patient has had to be referred to a medical doctor, and no incident has been reported. On average, 1.5 prescription-only medicines have been dispensed per patient; in addition, over the counter products have also been provided for 18% of patients. Overall, fewer than two products have been dispensed. All pharmacies taking part in the experiment have found the collaborative agreement simple to apply and beneficial to their practice. Patients expressed satisfaction, particularly as it has improved access to care.

Conclusion: These results demonstrate that pharmacists are an effective gateway into the healthcare system. In the future, changes to how certain medicines can be dispensed

by pharmacists could strengthen this role. The community pharmacy care pathway is part of an interprofessional cooperation model centred on the patient, improving access to primary care, optimising medical time and enabling savings for the healthcare system. Nationwide Roll-out of this model would require regulatory changes as well as enhanced digital tools for community pharmacies; it could also inspire switches of some prescription-only medicines. Topic Area: Community Pharmacy/ Primary care access Keywords: Community pharmacy; Care pathway; Primary care access; Prescription-only medicines; Interprofessional cooperation; Healthcare system economy; Medical desertification, Saving medical

Colorectal cancer and screening: the role of the French community pharmacist

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Colorectal cancer is a major public health issue in France. It is the second deadliest form of cancer, with around 48,000 new cases and 17,000 deaths each year. The national organised screening programme in France targets people aged between 50 and 74, who are invited to collect a stool sample at home every two years and then post it. Despite the existence of established distribution channels for screening kits, notably via doctors or by direct delivery to patients' homes, the implementation rate remains below the national target of 65%. Against this backdrop, and following a pilot scheme in Corsica departments, the dispensing of screening kits directly through community pharmacies was rolled out across the whole of France in 2022.

This strategy aims to improve colorectal cancer screening coverage. Thanks to their dense territorial network and extended opening hours, community pharmacies provide a convenient access point for the population. The program also helps to raise patients' awareness of the importance of early screening and to promote preventive health measures through pharmaceutical advice. Patient eligibility is assessed in pharmacy using a dedicated self-assessment questionnaire.

Data is now available to assess the roll-out of the scheme. Nationwide, nearly 1,480,000 of testing kits have now been dispensed directly from pharmacies in 2025. In the first half of 2025, 94% of pharmacies were participating in the scheme. The completion rate for kits dispensed by pharmacists reached 84% in 2024 (with 12 months' data on reimbursements). Around 4.5% of tests carried out proved positive. Regional data confirm the impact of this strategy.

The dispensing of kits in pharmacies therefore appears to be a promising strategy for improving participation in colorectal cancer screening and highlighting the role of community

pharmacists in prevention. Despite encouraging results, the overall participation rate remains insufficient, highlighting the need to step up communication and public awareness initiatives, particularly during national campaigns such as 'Blue March', in order to increase participation in screening and reduce preventable mortality from this cancer.

Biosimilars in France: Regulatory updates and the impact of substitution rights

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Biosimilar medicines offer significant potential for cost savings in healthcare systems. In France, they represent a significant opportunity to enhance the financial sustainability of the National Health Insurance system while ensuring equitable access to innovative treatments. According to national estimates, the development of biosimilars could generate nearly one billion euros in savings per year for the French healthcare system between 2022 and 2030.

As part of the 2018–2022 National Health Strategy, the French authorities have introduced several measures aimed at achieving a biosimilar market penetration rate of 80%. These policies were initially based on financial incentives targeted primarily at hospitals and general practitioners. However, as had already been observed during the roll-out of generic medicines in the 2000s, the exclusion of community pharmacists did not enable this objective to be achieved.

In order to accelerate the uptake of biosimilars, France has gradually updated its regulatory framework by introducing the right for community pharmacists to substitute medicines for the majority of substitutable biological groups. The pharmacist may now substitute a reference biological medicine with a biosimilar belonging to the same substitutable biological group, unless otherwise specified by the prescriber. They thus play a central role in informing patients and providing guidance on the use of injection devices.

An analysis of regulatory developments and market data, drawn in particular from reference databases, shows, in particular, an acceleration in substitution rates, rising from 32.4% in 2023 to nearly 50% in 2025. The growing involvement of pharmacies means that, since the effective implementation of the right to substitution, substitution rates for almost all molecules eligible for substitution for more than three months have exceeded 70%. The growth of substitution in pharmacies is thus generating a significant economic impact.

The right to substitute biosimilars is a key regulatory lever for accelerating their adoption in community pharmacies and contributing to the sustainability of the French healthcare system, whilst maintaining a high level of safety and pharmacovigilance monitoring.

Inhalation technique: The role of pharmacists in patient education and proper use

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Background: Correct inhalation technique is essential for effective delivery of inhaled medications, yet many patients demonstrate critical errors that reduce treatment efficacy. Community pharmacists are well positioned to assess and improve inhaler technique because of their accessibility and frequent contact with patients.

Objective: To evaluate the role of pharmacists in teaching and reinforcing inhalation technique and to summarize outcomes of pharmacist-led interventions in community pharmacy settings.

Method: This paper reviews recent studies and program reports describing pharmacist-led assessments, education sessions, and follow-up for patients using pressurized metered-dose inhalers (pMDIs), dry powder inhalers (DPIs), and soft-mist inhalers. Key outcomes examined include prevalence of inhaler errors at baseline, improvements in technique after pharmacist counseling, adherence measures, symptom control, and healthcare utilization.

Results: Across studies, baseline rates of at least one critical inhaler error ranged from 30% to 80%. Brief, hands-on counseling by pharmacists—often using placebo devices, checklists, and teach-back—consistently produced large improvements in correct technique (absolute increases commonly 30–50%). Many interventions also reported secondary benefits: improved adherence, better symptom scores or peak flow measurements, and reduced emergency visits or hospitalizations in selected cohorts. Barriers included limited pharmacy time, variable staff training, and inconsistent follow-up.

Conclusion: Community pharmacists can significantly improve inhalation technique through brief, structured interventions. Integrating standardized assessment tools, regular refresher training for staff, and routine documentation into pharmacy workflow are practical steps to maximize patient benefits. Further randomized studies with long-term clinical outcomes would strengthen the evidence base.

Personalized pharmacy: From pharmaceutical compounding to clinical support "formulae magistrales montenegrinae"

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The first edition of *Formulae Magistrales Montenegrinae* represents an important step in the development and standardization of magistral pharmaceutical practice in Montenegro. Magistral (pharmaceutical compounding) preparation of medicines is one of the oldest and most authentic forms of pharmaceutical activity and remains essential for providing individualized therapy tailored to the specific needs of patients, particularly in cases where industrially manufactured medicines are not available, suitable, or adequately formulated.

The publication was prepared by a team of experts from the Pharmaceutical Chamber of Montenegro to support pharmacists in pharmaceutical compounding and to assist physicians in prescribing individualized therapies. The formulas were developed in accordance with legal regulations, pharmacopeial standards, and ethical principles, drawing on relevant scientific literature and magistral formularies from other countries, with particular emphasis on formulations with documented composition and stability.

The first edition contains 175 monographs of magistral preparations, classified into ten chapters according to pharmaceutical form and route of administration, in accordance with the European Pharmacopoeia (Ph. Eur.). The preparations are organized into the following chapters based on the site of administration: Auricularia, Nasalia, Ophthalmica, Praeparationes buccales, Praeparationes liquidae perorales, Pulveres perorales, Praeparationes liquidae ad usum dermicum, Praeparationes semisolidae ad usum dermicum, Rectalia, and Vaginalia. Special attention was given to preparations adapted for specific patient groups, including pediatric and geriatric patients, as well as formulations prepared from commercially available dosage forms when appropriate.

In addition to the monographs, the manual includes general guidelines on preparation, storage, dispensing, quality assurance, and risk assessment, based on the Council of Europe Resolution CM/Res(2016)1 on quality and safety

assurance requirements for medicinal products prepared in pharmacies for the special needs of patients. It also covers practical chapters on pharmaceutical compounding, including risk assessment in pharmacy compounding, compounding of oral powders, liquid oral preparations, semi-solid dermal preparations, rectal and vaginal preparations, preservation of ophthalmic drops, and safe handling of hazardous substances during the preparation of non-sterile pharmaceutical forms.

This edition is the result of extensive expert work and provides a foundation for further improvement of standards in magistral pharmaceutical practice, aiming to enhance the quality of pharmaceutical health care and promote continuous professional development.

The *Formulae Magistrales Montenegrinae* provide pharmacists with a structured framework and expert guidance to prepare medicines tailored to the individual needs of specific patients. By relying on the detailed monographs, pharmacists can adapt pharmaceutical forms—modifying dosage, strength, or formulation type—to ensure safe, effective, and personalized therapy for each patient. This approach underscores the essential role of the pharmacist as a specialist in compounding and individualized patient care. *Formulae Magistrales Montenegrinae* restore the pharmacist's full professional role, reaffirming their position as the specialist responsible for delivering individualized, patient-centered care and advancing the practice of personalized pharmacotherapy.

A holistic approach to legislative advocacy in community pharmacy practice

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Background: The practice of pharmacy is constantly changing as the needs of patients and advancements in healthcare evolve worldwide. With these changes comes a need to update the standard practice of pharmacy technicians, student pharmacists, and pharmacists. One of the major barriers are legislative restrictions, especially those that limit the practice of community pharmacy. This work will discuss a multifaceted strategy to support continued advancement of pharmacy practice through legislative advocacy. The focus of the advocacy work centres on advancing pharmacy technician and pharmacist roles and creating transparent reimbursement processes for medication dispensing. The success of these initiatives was possible due to the inclusion of practising community pharmacists, student pharmacists, and pharmacy faculty members in a working group with a pharmacy organisation. This presentation will aim to:

- Discuss the importance of legislative advocacy from all pharmacy team members (technicians, student pharmacists,

and pharmacists) to advance the practice of community pharmacy. • Highlight strategies utilised to advance pharmacy practice, reimbursement, and patient access to care in one area of the United States. • Develop goals for legislative change that will positively impact community pharmacy practice worldwide.

Method: Legislative change at each level was championed by a collaborative working group consisting of community pharmacy practitioners, pharmacy school faculty, and the state pharmacist association. Regular communication allowed for a sharing of ideas and concerns, which led to the thorough assessment of suggested legislative updates and the development of best practice in community pharmacy settings. All legislative changes were then pursued in the area legislature, with experts providing testimony in support of changes as needed. Community pharmacy practitioners incorporated best practice for reimbursement strategies and developed workflows that optimised technician practice to support increased access to patient care services. Barriers to successful implementation, either in law or in practice, were then shared with the collaborative working group, and solutions discussed and pursued.

Results: Legislative change allowing for technician practice advancement in the area was successful, allowing technicians to perform increased duties, including, but not limited to prescription transfers, immunisations, and inclusion of a technician on the State Board of Pharmacy. The collaborative working group was able to successfully support dispensing reimbursement initiatives and reimbursement for non-dispensing services while also making updates in the law allowing for pharmacist-prescribed contraceptives, prescription adaptation, and dispensing of tobacco cessation products, immunisations, and naloxone without a prescription. Student pharmacists were supported through new education initiatives preparing them to enter the workforce as legislative changes were made, with reduced barriers to licensing enacted through legislative advocacy.

Conclusion: The legislative changes enacted using this comprehensive approach have been extensive and meaningful. This work continues as the role of the pharmacist in a community setting continues to evolve to include more clinical assessment tasks and prescriptive authority. Inviting a collaborative group to develop a legislative agenda which supports all types of pharmacy practitioners results in meaningful change and advances the practice of community pharmacy.

Awareness and future challenges of certified community collaboration pharmacy in Japan

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Background: A Certified Community Collaboration Pharmacy (CCCP) in Japan is a government-certified pharmacy that collaborates with other healthcare providers to ensure continuous medication management and pharmaceutical care for patients in the community. Certification criteria are: 1. Collaboration with healthcare institutions, 2. Support for continuity of care, 3. Provision of community and home pharmaceutical care, 4. Participation in multidisciplinary healthcare teams, 5. Adequate staffing and operational systems. The CCCPs are expected to play a central role in the provision of community-based healthcare. However, there is no comprehensive report on activities with CCCPs after certification. We surveyed CCCPs regarding the current status and challenges of CCCPs. We also surveyed patients using CCCPs regarding their awareness of CCCPs and their expectations for them.

Method: A survey regarding activity status was conducted for all CCCPs certified as of the end of 2023. Additionally, patients using some CCCPs were asked about their awareness of the CCCPs' functions and their future expectations. All responses were collected via a web system.

Results: We obtained 1085 responses from 4087 CCCPs (response rate: 26.5%). Among the 1,085 pharmacies included in the study, 882 belonged to pharmacy chains operating 300 or more outlets. The number of responses from patients was 108. Most CCCPs provided services included in the certification requirements even after certification. The most challenging aspect of maintaining certification requirements was establishing a collaboration for sharing information with other healthcare providers. Many respondents pointed out that patients do not fully understand the functions of CCCPs. Only 10% of respondents indicated that patients fully understand CCCP's functions not available at other uncertified pharmacies. Furthermore, there were a few opinions that obtaining certification as a CCCP led to improvements in operations or other aspects. The responses of patients indicated that 16/108 (14.8%) answered that they know what CCCP and their functions are. 77% of patients stated they would like to use the pharmacy regardless of whether it is a CCCP. The highest expectation for CCCP was clear explanations of medications.

Conclusion: Although CCCPs are expected to strengthen cooperation among healthcare providers and support patients who receive care across multiple medical institutions, several challenges have been pointed out. A significant proportion of CCCPs belong to large pharmacy

chains. The concentration may raise concerns about whether the system sufficiently reflects the needs and characteristics of local communities. Patient responses indicated that few cases selected pharmacies based on CCCP certification, suggesting that certification status does not influence patients' pharmacy choices. This may be because many patients are not fully aware of the role and benefits of CCCPs, which may reduce the utilization of their services. Pharmacists working at CCCPs also felt that awareness of CCCP within society is low and do not perceive it as particularly useful for enhancing their own professional capabilities. Policies are needed to raise awareness of the social utility of CCCP and to link activities within CCCP to the expansion of pharmacists' professional roles.

Community pharmacists as key players in antimicrobial stewardship: a narrative review

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Background: Antimicrobial resistance (AMR) is a global health threat estimated to cause 10 million deaths annually and a \$100 trillion socioeconomic loss by 2050. In 2023, 1 in 3 urinary tract infections and 1 in 6 bloodstream infections were caused by resistant organisms, calling for urgent steps to prevent a return to the pre-antibiotic era. AMR is driven by the irrational use of antibiotics, poor infection prevention and control practices, and the prevalence of substandard and falsified medicines. Given that about 80% of antibiotics are used outside the hospital setting, community pharmacists are key stakeholders in the fight against AMR.

Objective: To review and identify the role of community pharmacists in mitigating antimicrobial resistance.

Method: A narrative literature review of articles sourced from PubMed, Scopus, and Google Scholar was conducted. Articles written in English and focused on the role of community pharmacists in mitigating AMR were reviewed.

Results: Five key strategies were identified to leverage community pharmacists as antimicrobial stewards: patient education and community engagement; expanding vaccination coverage; providing diagnostic clarity; licensed prescribing for common infections; and implementation research. Community pharmacists can reduce antibiotic misuse by educating the community on the dangers of misusing antibiotics when they are not needed, debunking myths about the effectiveness of antibiotics, and providing information on symptomatic relief for patients with viral infections. Additionally, by promoting hygienic practices in

the community, as witnessed during the COVID-19 pandemic, community pharmacists play a key role in infection prevention. Vaccine hesitancy driven by misinformation, safety concerns, the politicization of vaccines, and lack of trust in government, pose a challenge to herd immunity. Community pharmacists are well positioned as trusted professionals to build patients' trust in vaccination and administer life-saving vaccines. Currently, about 56 countries have pharmacist-based vaccination services with outcomes of increased vaccination coverage. Increased advocacy on the effectiveness of pharmacists in promoting vaccination and driving herd immunity is needed. Providing pharmacists with point-of-care testing kits to differentiate viral infections from bacterial infections could reduce antibiotic prescribing driven by diagnostic uncertainty, especially for cough, cold, and sore throat. Community pharmacists, when licensed to prescribe antibiotics for common infections, could reduce the non-prescription dispensing of antibiotics. However, granting pharmacists the autonomy to prescribe should be preceded by advanced training in the clinical diagnosis of the infections they are authorized to manage, along with adequate regulatory oversight. Additionally Restricting the range of antibiotics available for independent prescribing would further promote judicious use. Empowering pharmacists with clinical decision support systems could further optimise antibiotic prescribing decisions by providing evidence-based guidance at the point of care. Community pharmacists, as lifelong researchers, need to conduct research to identify community-specific deficits regarding antimicrobial use, source, perception and infection prevention and control practices. Based on research findings, they can design community-specific antimicrobial stewardship initiatives to optimize infection prevention and antibiotic use.

Conclusion: Community pharmacists are crucial in the fight against AMR and require advanced training and supportive policies to effectively contribute to antimicrobial stewardship.

Artificial intelligence-enabled adherence monitoring in community pharmacy: A scalable digital model to strengthen rural chronic kidney disease prevention

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Background: Chronic kidney disease (CKD) disproportionately affects rural populations due to delayed risk identification and limited access to specialist care. In Australia, individuals in rural and remote areas are twice as likely to die from CKD and four times more likely to require kidney replacement therapy compared to those in urban settings. Medication and

lifestyle adherence are key modifiable determinants of CKD progression; however, adherence assessment in community pharmacy remains largely subjective and inconsistently integrated into workflow. Artificial intelligence (AI)-enabled dispensing analytics, such as the StrongRoom AI Pro platform, offer an opportunity to transform routine pharmacy data into real-time adherence stratification, supporting earlier pharmacist-led intervention. Early metropolitan feasibility testing demonstrated technical integration and analytic concordance, supporting expansion to rural settings.

Objective: This study aims to evaluate the feasibility and analytic validity of an AI-supported adherence platform integrated within community pharmacy workflow in rural Australia.

Method: A pilot prospective study is currently being conducted across 4 community pharmacies in rural Queensland, Australia. Recruitment commenced in March 2026, targeting adults aged 35–74 years at high risk of CKD identified through pharmacist-led screening. Participants completed validated measures of medication adherence (MARS), lifestyle adherence (PALMQ and HPLP-II), and health-related quality of life (EQ-5D-5L). The StrongRoom AI Pro platform integrated 12-month dispensing histories to generate proportion of days covered (PDC) and automatically stratifies adherence risk. Psychometric analyses assessed the validity and reliability of patient-reported measures. Feasibility outcomes studied included workflow integration, screening and administration time, and scalability.

Results: (Preliminary findings): Eight adults at elevated CKD risk (median age 65 years; common comorbidities: dyslipidaemia 75%, hypertension 62.5%, type 2 diabetes 50%) were recruited. Platform integration was effective without workflow disruption. Objective PDC identified 62.5% with 100% adherence and 37.5% with 80%–100%. Early analyses demonstrated positive correlation between AI-generated adherence metrics and self-reported measures.

Conclusion: Preliminary feasibility data supported the integration of AI-enabled adherence monitoring in Australian community pharmacy. The next study will evaluate scalability, contextual adaptability, and workforce engagement, with potential to strengthen pharmacist-led preventive care and enable knowledge exchange in underserved rural settings.

Improving pharmacological prescription review through indication specific antibiotic prescriptions: A community pharmacy data based study

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Background: Antimicrobial resistance (AMR) continues to pose a major global public health threat. Community pharmacies play a central role in safeguarding rational antibiotic use through pharmacological prescription review, which relies on accurate and specific indications. In daily practice, many antibiotic prescriptions appear to be issued with vague or incomplete indications, limiting pharmacists' ability to ensure clinically appropriate dispensing. Despite recent national AMR initiatives in Denmark, including the 2025 multi stakeholder AMR declaration and primary care stewardship tools, the extent of incomplete antibiotic indications in community pharmacy practice remains unclear.

Objective: To determine the prevalence of incomplete indications on antibiotic prescriptions and to evaluate whether targeted communication with prescribers can improve indication quality.

Method: A two step observational study was conducted across four community pharmacy branches. All prescriptions for systemic antibiotics (ATC J01) were collected during two 4 week periods: October 2025 (baseline) and February 2026 (post intervention). Between these periods, prescribers were informed of the preliminary findings through a written e-mail communication and were encouraged to provide complete and specific indications to enable a thorough pharmacological review of the prescription. Local physicians were also invited to attend an in person meeting at the pharmacy to discuss the project and strengthen collaborative AMR efforts; however, the meeting was cancelled due to a scheduling conflict with a medical conference.

Results: In October 2025, 708 antibiotic prescriptions were collected; 127 (18%) lacked an adequate indication. In February 2026, 875 prescriptions were collected; 234 (27%) lacked an adequate indication.

Conclusion: The data collection confirms our initial assumptions: both the first and second sampling revealed that a substantial proportion of antibiotic prescriptions continue to lack complete and specific indications. This limits pharmacists' ability to perform a thorough pharmacological prescription review and may hinder rational antibiotic use—an essential component of AMR mitigation. As the indications not only remained insufficient but worsened after the initial prescriber communication, the results indicate a need for more targeted and structured interventions. The next step

could be to analyze whether specific medical clinics are more likely than others to use vague indications such as “for inflammation” or “for infection.” This will allow for directed follow up and dialogue with the clinics where the issue is most pronounced. It is evident that this area requires ongoing attention and strengthened cross sector collaboration. Moving forward, work should focus on systematic follow up, differentiated feedback to prescribers, more direct engagement with selected clinics, and potentially involvement of regional healthcare authorities to reinforce expectations regarding indication documentation. Such initiatives may help support more effective antimicrobial stewardship in primary care.

Sustainability roadmap for pharmacies in Portugal

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Background: Sustainability enables pharmacies to strengthen community wellbeing and contribute to a more resilient and equitable health future. To support the integration of Environmental, Social, and Governance (ESG) principles in community pharmacy practice, the National Association of Pharmacies (ANF) developed the Sustainability Roadmap for Pharmacies in Portugal (Roadmap). Its aim is to offer a structured methodology that helps pharmacies initiate or expand sustainability actions through recommendations, a pharmacy-specific carbon footprint calculator and a performance metrics form.

Method: The project was developed by ANF with support from a sustainability consultancy. It began in 2024 with an electronic sustainability diagnostic questionnaire distributed to all affiliated community pharmacies (n=2772), yielding 447 responses. A double materiality assessment was completed in 2025 to evaluate how pharmacy activities impact the environment and society and how environmental and societal changes may influence financial and operational performance. The assessment incorporated internal data, regulatory requirements, and benchmarking analyses. Stakeholder engagement included six interviews with sectoral bodies, two interviews with healthcare specialists, and six focus groups involving 31 pharmacies, enabling the identification and prioritisation of critical sustainability issues. Roadmap recommendations were developed through internal data review and a literature scan and can be updated over time. The carbon footprint calculator follows a methodology aligned with the Greenhouse Gas Protocol, covering Scopes 1 and 2, and selected Scope 3 categories. Emission factors were sourced from DEFRA (Department for Environment, Food and Rural Affairs, UK), a ADEME (Agence

de la transition écologique, France) and APA (Agência Portuguesa do Ambiente).

Results: The double materiality assessment identified the following material topics: Environmental (Energy, Climate change adaptation and mitigation, Incoming materials flow, Waste); Social (Working conditions, Social, economic and cultural rights of communities, Social inclusion of patients, Information provided to patients, Patient safety); Governance (Supplier relationship management, Digital transformation). The Roadmap was developed to provide recommendations for each topic. These recommendations are classified into levels according to financial effort and operational complexity (49 for Level I, 51 for Level II, and 25 for Level III). For each recommendation, pharmacies can access the expected benefits and, when applicable, available partnership opportunities. The Roadmap also includes a pharmacy self-assessment questionnaire and a carbon footprint calculator, enabling pharmacies to save progress, and monitor performance. Pharmacy engagement is recognised through sustainability seals (Bronze, Silver, Gold) reassessed annually: Bronze requires all Level I actions; Silver at least 70% of Level II and all Level I; Gold at least 50% of Level III, 70% of Level II, and all Level I. The Roadmap enables contributions to SDGs 3, 8, 9, 12, and 13. The project has been completed, and national rollout is planned for March 2026, with voluntary participation.

Conclusion: By promoting efficiency gains, cost optimisation, and resilience, the Roadmap strengthens the capacity of pharmacies to generate positive impacts and enhance engagement with patients and communities. It represents a decisive step toward a forward looking vision in which pharmacies play an active role in driving sustainable transformation within the healthcare sector. Continued progress will depend on sustained engagement and professional training.

Pharmacist referral to medical consultation in community pharmacy: evaluation of the Fast-Track follow-up programme

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Background: Community pharmacists frequently identify patients presenting symptoms suggestive of undiagnosed disease or poor control of an existing condition. Referral to medical consultation is therefore a common professional activity in community pharmacy. However, these referrals are rarely systematically documented or followed up, resulting in limited evidence regarding their outcomes and their contribution to patient care pathways.

Objective: To describe the implementation and outcomes of the Fast-Track programme, a structured system designed to document pharmacist referrals to medical consultation and monitor follow-up in community pharmacy.

Method: The Fast-Track programme enables community pharmacists to register referrals to medical consultation when patients present signs or symptoms suggestive of undiagnosed or uncontrolled conditions across any therapeutic area. When appropriate, pharmacists provide a written referral letter summarising the clinical information supporting the referral. The programme includes two intervention points: referral registration (t0), during which the situation motivating referral is documented, and follow-up (t1), conducted approximately 30 days later to assess whether the patient attended medical consultation and to record outcomes. Data collection, follow-up scheduling and documentation are managed through an electronic platform using standardised surveys. Data recorded across participating portuguese community pharmacies between 1 March 2023 and 17 March 2026 were analysed.

Results: A total of 1,180 patients were referred to medical consultation across 83 community pharmacies. Follow-up information was obtained for 859 referrals. Among these patients, 50.1% (n=430) reported attending a medical consultation, with 64.2% occurring in public primary care services. Among patients who attended consultation, 34.9% (n=150) received a new diagnosis and 64.2% (n=276) received a new prescription. Among those prescribed treatment, 92.8% (n=256) reported initiating therapy.

Conclusion: Implementing a structured referral documentation and follow-up system enables community pharmacists to monitor the outcomes of referral interventions and better understand their contribution to patient care pathways. Systematic documentation of pharmacist-initiated referrals may strengthen the role of community pharmacy in the early identification of health problems and support coordination between pharmacy and medical care.

Public knowledge, attitudes and practices regarding antibiotic use and antimicrobial resistance in Greece: A nationwide cross-sectional study

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Background: Antimicrobial resistance (AMR) is a major global public health threat, strongly associated with inappropriate antibiotic use. Greece remains among the European countries with high antibiotic consumption and a significant burden of antibiotic-resistant bacteria. Understanding the knowledge, attitudes and practices (KAP) of the general population is essential for designing effective public health interventions. The purpose of this research is to assess the level of knowledge, attitudes and practices of the adult population in Greece regarding antibiotic use and antimicrobial resistance, and to explore associations between knowledge level and socio-demographic characteristics.

Method: A quantitative cross-sectional field study was conducted in November-December 2025 among 390 adults (≥18 years) from 15 geographically diverse areas of Greece. Data were collected using an officially translated and unmodified version of the Special Eurobarometer 522 questionnaire on antimicrobial resistance, the questionnaire included seven demographic and sixteen practice-related questions. Knowledge was assessed through four validated questions (score range 0–4), generating a total knowledge score. Descriptive statistics, chi-square tests, independent samples t-tests and one-way ANOVA were performed using SPSS, with statistical significance set at $p \leq 0.05$. Participation was voluntary and anonymous, ethical approval was granted by OSFE (Federation of Pharmacists Cooperatives of Greece)

Results: The mean knowledge score was moderate (mean score: 2.23/4). While 59.5% correctly identified that antibiotics do not kill viruses and 65.4% that they are ineffective against colds, only 47.4% recognised that unnecessary use reduces antibiotic effectiveness, and 51% were aware of potential adverse effects. Higher knowledge scores were significantly associated with higher educational attainment ($p < 0.05$ across key knowledge items), higher occupational status (Q5A $p = 0.012$; Q5C $p = 0.019$), higher social class (self-reported) (Q5A $p < 0.001$; Q5D $p = 0.011$), and fewer financial difficulties (all knowledge items $p \leq 0.027$). Antibiotic use in the previous 12 months was

reported by 52.6% of participants. Only 14% reported undergoing diagnostic testing prior to antibiotic treatment initiation. Although 71.8% knew that antibiotic treatment should be completed as prescribed, 14% believed it could be stopped when feeling better. Information exposure was limited: only 18.5% recalled receiving information about avoiding unnecessary antibiotic use during the previous year. However, 92% expressed willingness to receive further information, mainly regarding AMR and appropriate antibiotic use. Physicians and pharmacists were identified as the most trusted sources of information.

Conclusion: The Greek population demonstrates moderate knowledge regarding antibiotic use, with significant gaps particularly concerning antimicrobial resistance and adverse effects. Socio-economic and educational disparities play a crucial role in knowledge distribution. High recent antibiotic consumption, limited diagnostic confirmation, and insufficient public information highlight the need for targeted educational strategies and strengthened policies regarding antimicrobial medicine and their use. Health professionals, especially physicians and pharmacists, should play a key role in improving public awareness and promoting rational antibiotic use to mitigate resistance in antibiotic medicines in Greece.

Real-world evidence of quality of life benefits from symptom relief following treatment with OTC Cough and cold syrups in adults with the common cold

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Background: The common cold is among the most prevalent illnesses globally and is frequently managed in community pharmacy, where pharmacists guide self care and appropriate use of over the counter (OTC) medicines. Although OTC cough and cold syrups containing dextromethorphan, guaifenesin and doxylamine are widely used and effective for symptom relief, their broader impact on patient quality of life (QoL) in real world settings has not been measured. This study evaluated the real-world effectiveness of common OTC cough and cold syrups on QoL among adults experiencing cough associated with the common cold.

Method: In this Phase IV, randomised, decentralized, open-label study, 244 adults (≥18 years) across the United States were recruited via digital advertising and screened through video calls. Eligible participants had moderate-to-severe cough onset within the prior 48 hours and at least one additional mild cold symptom. Participants were randomised

into two groups: Group 1 received a combination of dextromethorphan 20 mg and guaifenesin 400 mg; Group 2 received the same regimen with the addition of dextromethorphan 30 mg with doxylamine succinate 12.5 mg for nighttime use. Study products were shipped directly to participants, to be used according to label instructions. Subjects completed daily electronic questionnaires assessing QoL, including the validated Wisconsin Upper Respiratory Symptom Survey-21 (WURSS-21). Primary endpoints included changes from baseline in WURSS-21 total score, total and individual symptom and QoL domain scores. Secondary endpoints evaluated improvements in specific QoL items (e.g., falling asleep, sleeping through the night, coughing in public) and grouped domains such as sleep quality, vitality, physical and social activity. The modified intention to treat (mITT) population included 222 participants.

Results: Both regimens produced consistent improvements from baseline in symptoms and QoL in the mITT population. Statistically significant improvements ($p < 0.05$) were observed from Day 1 through end of treatment in WURSS 21 total, symptom, and QoL domain scores. Improvements in individual symptoms and QoL domain scores were statistically significant ($p < 0.05$) from Day 1 or 2 through end of treatment. Secondary analyses revealed significant improvements across all specific QoL questions and grouped domains, with effects evident from Day 1 to the end of treatment. Both regimens were well tolerated, with only two mild adverse events reported, none related to the study products.

Conclusion: This study is the first to demonstrate that symptom relief from dextromethorphan/guaifenesin and dextromethorphan/doxylamine formulations is associated with meaningful QoL improvements as early as Day 1 through the end of treatment among adults with the common cold, spanning sleep, physical and social activities. These real world findings support the broader impact of OTC cough and cold treatments, not only in alleviating symptoms but also in helping individuals resume everyday activities earlier. These results can help pharmacists and other healthcare professionals guide appropriate, evidence based use of OTC cough and cold medicines and support patient centred self care and practice models that emphasise real world evidence and broader public health impact of effective self care interventions.

GLP 1 receptor agonist–induced constipation: The critical role of pharmacists in pharmacological management and treatment adherence

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Background: Glucagon like peptide 1 receptor agonists (GLP 1RAs) and dual GLP 1/GIP co agonists have transformed obesity and type 2 diabetes care but are frequently limited by gastrointestinal (GI) adverse events, including constipation. This constipation is typically slow transit in nature, driven by delayed gastric emptying and reduced intestinal motility, and it can impair quality of life and treatment adherence. Lifestyle modification, although a common first line recommendation, is often insufficient for drug induced constipation. This abstract highlights the critical role of pharmacists in early identification, evidence based OTC laxative selection, structured escalation, and patient counselling to support treatment adherence.

Method: This narrative review synthesised published evidence on incretin related GI adverse events, with emphasis on constipation, and integrated recommendations from major gastroenterology guidelines (AGA, WGO, NICE, ESPCG). Pharmacological options were evaluated to develop a pharmacist focused management framework supporting early recognition, safe OTC laxative selection, and adherence management in patients receiving GLP 1RAs or GLP 1/GIP co agonists.

Results: GI adverse events occur in 40–70% of patients treated with incretin based therapies, and constipation affects about 30%, contributing to reduced tolerability and treatment discontinuation. Constipation often emerges within the first four weeks of therapy, may persist longer than other GI symptoms, and is a notable contributor to discontinuation, with up to 17% of semaglutide users stopping treatment because of GI adverse events. Because these symptoms typically emerge early in treatment, and given pharmacists' accessibility, they are well positioned to intervene promptly using a structured, algorithm-based approach: 1) Start with lifestyle modification and reassurance during incretin initiation (gradual soluble fiber, hydration, regular exercise, small frequent meals). 2) Add first line osmotic laxatives (PEG/macrogol) when lifestyle measures are insufficient, titrating dose to stool consistency. 3) Escalate to second-line stimulant laxatives (bisacodyl 5–10 mg) if osmotic therapy is inadequate; consider early combination therapy (osmotic + stimulant) in resistant cases or high-risk patients receiving higher dose incretin therapy or history of constipation. 4) Use adjunctive therapy such as docusate for painful defecation and selective probiotic or prebiotic support when clinically appropriate, and adjust or de-escalate

these therapies based on ongoing monitoring and once symptoms stabilize. Monitoring: Regularly assess patient-reported outcomes and refer to gastroenterology when red-flag symptoms appear (such as blood in stool, severe abdominal pain, or unexplained weight loss), when obstruction is suspected, or when constipation remains refractory despite combination therapy. Osmotic and stimulant laxatives have favourable benefit–risk profiles due to minimal systemic absorption, supporting their use in patients with multiple comorbidities. When appropriately selected and monitored, these agents are effective, safe, and essential for supporting adherence to incretin therapy.

Conclusion: Pharmacists play a central role in managing GLP 1RA-associated constipation. Through early assessment, guideline aligned OTC laxative selection, structured escalation, and patient centred counselling, pharmacists can reduce treatment interruption, preserve quality of life, and help patients maintain the substantial benefits of incretin-based therapies. Integrating pharmacist led algorithms into routine practice offers a scalable strategy to enhance adherence and optimise clinical outcomes.

Advancing Irish Community Pharmacy Services: Development and evaluation of a pharmacist assessment form for a common conditions service

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Background: The Community Pharmacy Agreement 2025 introduced the Common Conditions Service (CCS) to expand pharmacists' clinical roles and improve access to timely, community-based care. The CCS is supported by Health Service Executive (HSE) clinical protocols, Pharmaceutical Society of Ireland guidelines, and mandatory national pharmacist training, providing a structured framework for managing initially eight common conditions. Pharmacists can supply treatment and, in defined cases, prescribe under protocol, helping to reduce pressure on general practice services. However, while implementation supports exist, a gap remains in the availability of a standardised consultation tool to ensure consistent, protocol aligned pharmacist assessments. The Community Pharmacy Agreement's dedicated funding and evaluation requirements further highlight the need for practical documentation tools that support high quality CCS delivery. **Objective:** The purpose of this work was to develop Pharmacist Assessment Forms (PAFs) to support the delivery of the CCS by providing a structured, protocol aligned consultation tool that enhances consistency, documentation, and decision-making within CCS clinical assessments.

Method: A PAF for each condition was drafted by defining the core elements required for CCS consultations and mapping these to the relevant HSE clinical protocols and existing reference tools, including a consultation form included in the HSE documentation. The draft underwent several iterative revisions in collaboration with an external pharmacist reviewer, followed by an independent review by a third pharmacist. The finalised PAFs were made available to all members of the Irish Pharmacy Union (IPU). A feedback survey was developed and distributed to the membership, and a smaller group of pharmacists who used the PAFs in practice provided experiential feedback for subsequent evaluation.

Results: A PAF for each condition was published on the IPU CCS Hub for member access. These pages received 7253 views to date following publication. The feedback survey was disseminated via the IPU Newsletter (circulated to 2,573 recipients, including members, staff, students, and chain representatives) and through the IPU WhatsApp channel (771 recipients), acknowledging overlap across both groups. Survey responses indicated strong support for the availability of structured PAFs, with pharmacists reporting that the forms improved clarity, supported protocol aligned assessments, and enhanced consultation consistency. Some respondents highlighted opportunities to streamline the layout. A smaller group of pharmacists who used the PAFs in practice provided positive experiential feedback, reinforcing their perceived value in CCS delivery.

Conclusion: The creation of the PAFs represents an important step in supporting the structured and consistent delivery of the CCS. Engagement from pharmacists indicates that the PAFs provide meaningful support during consultations by improving clarity, guiding protocol aligned decision making, and enhancing confidence in clinical assessments. Feedback suggests the forms are particularly useful for standardising documentation, while also highlighting opportunities to streamline their layout. Ongoing user input and practical experience will guide iterative refinement. As a cornerstone of CCS delivery, the development and review of the PAFs will underpin safe, high quality patient care and reinforce the essential role of community pharmacists in expanding accessible, evidence based primary care services.

Navigating cognitive challenges: Strategies pharmacists use when independently prescribing

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Background: In June 2023, the scope of practice for pharmacists was expanded in British Columbia to include independent prescribing, enabling pharmacists to

autonomously assess patients and initiate therapy for contraceptives and certain conditions. Despite recognising its value, many pharmacists report discomfort with independent prescribing, as the autonomous nature heightens cognitive challenges in the clinical decision-making process. Cognitive challenges include uncertainty, defined as apprehension the prescriber feels about a decision, or ambiguity, which arises when a clinical scenario allows for multiple interpretations. Previous research in clinical decision-making has focused on physicians, and these findings cannot be extrapolated to pharmacists. Thus, it remains unknown how pharmacists navigate the cognitive challenges associated with independent prescribing. Understanding these strategies is essential to ensuring pharmacists are adequately prepared to practice to their full scope. The purpose of this study is to describe how primary care pharmacists in British Columbia navigate cognitive challenges when independently prescribing.

Method: This study used a phenomenological approach to explore pharmacists' lived experiences with navigating cognitive challenges when prescribing. Data was produced through semi-structured, one-on-one, virtual interviews and rich picture technique. Prior to the interview, participants created rich pictures by drawing a self-selected scenario in which they were able to prescribe despite encountering cognitive challenges in the clinical decision-making process. The drawing process helped facilitate deeper reflection and exploration of the strategies pharmacists used when prescribing. Interviews were transcribed verbatim and analysed thematically to identify categories of strategies. Symbolic, emotional, and contextual elements of the drawings were analysed to further inform the developing themes.

Results: Eighteen pharmacists were interviewed – fifteen from community pharmacies and three from Primary Care Networks. Pharmacists navigated cognitive challenges through relational support, experiential knowledge, and therapeutic alliances. Relational support, provided through discussions with colleagues about prescribing cases, helped pharmacists validate their decisions which built confidence amid uncertainty. Experience also helped pharmacists navigate uncertainty by reframing prescribing as an iterative process in which medications could be reassessed, rather than treating it as final decision. A therapeutic alliance, built through patient rapport, helped address ambiguity as pharmacists were able tailor prescribing to the goals of the patient through shared decision-making. Established relationships also enabled follow-up, reassuring pharmacists that they could intervene if side effects occurred or the medication proved ineffective.

Conclusion: These strategies helped pharmacists navigate uncertainty by shifting their decision-making process beyond algorithmic checklists. Approaching prescribing as an iterative process also relieved the pressure to always be "right", allowing them to embrace uncertainty with greater ease. Experience and continuing education supported this transition by enabling pharmacists to understand and

manage risks. Sharing and incorporating these strategies into continuing education programs, curriculum, and resources may help shift the professional culture to one that embraces the challenges of being a clinician, while fostering strong mentorship for future generations of pharmacists.

Basic guidance and role of community pharmacists in acne vulgaris management

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Background: Acne vulgaris is a common chronic inflammatory disease of the pilosebaceous unit, affecting approximately 9.4% of the global population, particularly adolescents and young adults. It is characterized by seborrhea, comedones, inflammatory lesions, and, in some cases, complications such as acne-induced hyperpigmentation, acne-induced erythema, and scarring. Beyond its physical manifestations, acne can substantially impair quality of life and is associated with psychological distress. Many individuals initially seek advice from community pharmacists and self-manage with over-the-counter (OTC) treatments. Topical therapies remain the cornerstone of treatment, while moderate to severe cases may require systemic therapies. International consensus recommendations support the use of dermatocosmetics, including cleansers, moisturizers, and sun protection, to improve treatment tolerability, adherence, quality of life, and long-term outcomes.

Objective: To develop a practical care algorithm outlining the role of community pharmacists in the management of acne vulgaris.

Method: A literature review on pharmacists' roles in dermatological care and current acne management guidelines was conducted in December 2025. An international online survey of FIP members was carried out between March and April 2026 to assess current practice, knowledge, and perceived barriers to pharmacist involvement in skin health. A total of 142 responses from 51 countries were analyzed. Based on the literature review and survey findings, an expert FIP panel of 13 pharmacists from five continents recommended the development of practical guidance on acne and other skin conditions. A pharmacist-centered care algorithm for acne management was subsequently developed, reviewed with the assistance of the International League of Dermatological Societies (ILDS) and supported by the International Pharmaceutical Federation (FIP).

Results: The algorithm identifies key pharmacist interventions across the patient journey. As an accessible first point of contact, pharmacists can assess acne severity and lesion characteristics, identify patients suitable for OTC management, and recognize referral criteria. Pharmacists can support the selection and appropriate use of acne treatments and dermocosmetics, promote healthy skincare practices, and provide advice on lifestyle measures. For patients receiving prescribed therapies, pharmacists can counsel on expected outcomes and adverse effects, monitor treatment use, support adherence, and recommend adjunctive dermocosmetic products to manage treatment-related dryness and irritation. Pharmacists also contribute to antimicrobial stewardship, safe isotretinoin use, and referral when psychosocial or clinical concerns are identified. During maintenance phases, dermocosmetics and photoprotection may help reduce relapse and acne-induced hyperpigmentation.

Conclusion: Pharmacists are often the first point of contact for people with acne and can play an important role in its management through assessment, first line treatment recommendation, dermocosmetic recommendations, antimicrobial stewardship, and referral when needed. Pharmacist-led interventions in community pharmacy settings can improve adherence, quality of life, and clinical outcomes.

Basic guidance and role of community pharmacists in management of superficial wounds and scar prevention

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Background: Cutaneous wound healing is a complex process that restores tissue integrity following injury, surgery, or aesthetic procedures. Delayed healing and excessive scarring may result from infection, prolonged inflammation, inadequate wound care, or individual factors. Community pharmacists are often the first healthcare professionals consulted after minor injuries, post-infectious wounds, and are increasingly involved in post-procedure skin care. While pharmacists contribute through first-aid advice, product recommendations, and patient counseling, practical guidance for acute wound management and scar prevention in community pharmacy remains limited. Objective: To develop a practical care algorithm and educational guidance for community pharmacists on the management of superficial wounds and scar prevention.

Method: A literature review on the pharmacist's role in dermatological care and current dermatology guidelines was

conducted in December 2025. An international online survey of FIP members was carried out between March and April 2026 to assess current practices, knowledge, and perceived barriers to pharmacist involvement in skin health. A total of 142 responses from 51 countries were analyzed. Based on the findings, a global FIP expert panel comprising 13 pharmacists from five continents recommended the development of practical guidance to support pharmacy practice. A pharmacist-centered care algorithm for wound management was subsequently developed, reviewed with the assistance of the International League of Dermatological Societies (ILDS) and supported by the International Pharmaceutical Federation (FIP).

Results: The algorithm outlines pharmacist interventions across acute wound management, post-surgery care, and scar prevention. Key counseling points include advice on basic wound hygiene and skin care, reinforcement of healthcare professional instructions, promotion of healthy healing practices, and referral when appropriate. For acute superficial wounds, pharmacists may recommend appropriate cleansing, hydration and barrier recovery through repair balms or ointments, dressing changes when needed, and assessment of tetanus vaccination status. Referral is recommended in the presence of infection, wound dehiscence, excessive bleeding, severe pain, non-healing wounds, or pathological scarring. Following wound closure, pharmacists can support healing through recommendations for gentle cleansing, moisturizing, and photoprotection. During after suture removal and complete re-epithelialization, scar prevention measures include continued hydration, scar massage, broad-spectrum sunscreen use, and patient education on sun-safe behaviors, particularly for individuals at higher risk of post-inflammatory hyperpigmentation.

Conclusion: Community pharmacists play an important role in supporting wound hygiene, skin care, patient education, and appropriate referral. Practical guidance may strengthen pharmacist confidence and contribute to improved adherence, quality of life, and healing outcomes.

Basic guidance and role of community pharmacists in managing atopic dermatitis

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Background: Atopic dermatitis (AD) is a chronic inflammatory skin disease characterized by pruritus, epidermal barrier dysfunction, immune dysregulation, and significant impact on quality of life. It affects up to 20% of children and 10% of adults and follows a relapsing-remitting course. Management

focuses on symptom control, prevention of flares, minimization of treatment-related adverse effects, and improvement of quality of life through trigger avoidance, regular emollient use, appropriate hygiene, and anti-inflammatory therapies. Topical corticosteroids (TCS) remain the mainstay of treatment for moderate-severe AD, although adherence is frequently limited by corticophobia. Patients commonly self-manage and often seek advice from community pharmacists before consulting a physician.

Objective: To develop a practical care algorithm outlining the role of community pharmacists in the management of AD. The algorithm is intended to be adapted to local practice models and may be particularly valuable in regions with limited access to dermatologists.

Method: A literature review on pharmacists' roles in dermatological care and current AD management guidelines was conducted in December 2025. An international online survey of FIP members was carried out between March and April 2026 to assess current practice, knowledge, and perceived barriers to pharmacist involvement in skin health. A total of 142 responses from 51 countries were analyzed. Based on the findings, an expert FIP panel of 13 pharmacists from five continents recommended the development of practical guidance on AD and other skin conditions. A pharmacist-centered care algorithm for atopic dermatitis management was subsequently developed, reviewed with the assistance of the International League of Dermatological Societies (ILDS) and supported by the International Pharmaceutical Federation (FIP).

Results: The algorithm identifies pharmacist interventions across the patient journey. As an accessible first point of contact, pharmacists can identify patients requiring referral, including those with suspected AD requiring diagnostic confirmation, uncontrolled or recurrent disease, suspected infection, significant psychosocial burden, treatment concerns, or poor response to therapy. Pharmacists can also assess disease severity, counsel on trigger avoidance, recommend regular use of emollients and emollients 'plus', and support appropriate skincare practices. Pharmacists are also well positioned to educate patients on TCS use, address corticophobia, promote adherence, assess treatment effectiveness, and monitor disease impact on quality of life.

Conclusion: Pharmacists are often the first point of contact for people with AD and can play an important role in AD management; in some countries, pharmacists may supply low-potency TCS without prescription, and are key to reinforce the importance of daily application of emollients to decrease flare frequencies, severity and duration. Pharmacist-led interventions have the potential to improve adherence, quality of life, and clinical outcomes, and their implementation should be expanded globally.

Basic guidance and role of community pharmacists in managing cancer treatment induced skin reactions

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Background: Skin reactions are among the most common adverse effects (AE) of cancer therapies and can negatively affect quality of life, lead to dose modifications, and contribute to treatment discontinuation. These reactions are often linked to impaired skin barrier function, inflammation, immune responses, and phototoxicity. Community pharmacists are well positioned to counsel patients receiving long-term cancer therapies, provide skin care advice, and support the prevention and management of treatment-related skin reactions. Objective: To develop a practical care algorithm outlining the role of community pharmacists in the prevention and management of cancer treatment-induced skin reactions.

Method: A literature review on pharmacists' roles in dermatological care and current guidance on cancer treatment-related skin AE was conducted in December 2025. An international online survey of FIP members was carried out between March and April 2026 to assess current practice, knowledge, and perceived barriers to pharmacist involvement. A total of 142 responses from 51 countries were analyzed. Based on the literature review and survey findings, an expert FIP panel of 13 pharmacists from five continents recommended the development of practical guidance on skin AE associated with cancer treatments. A pharmacist-centered care algorithm for cancer treatment induced skin reactions management was subsequently developed, reviewed with the assistance of the International League of Dermatological Societies (ILDS) and supported by the International Pharmaceutical Federation (FIP).

Results: Survey findings and expert insights indicate that pharmacists are more confident in managing common skin conditions than complex dermatological presentations, highlighting the need for targeted education and practical guidance. At the same time, pharmacists expressed strong interest in expanding their role in supporting patients experiencing cancer treatment-related skin AE. The proposed algorithm emphasizes proactive skin care from the start of cancer therapy. Pharmacists can provide education on maintaining a healthy skin barrier, recommend appropriate dermocosmetics, reinforce photoprotection measures, and recognize side effects that would require a specific consultation. Essential skin care includes a gentle cleanser, moisturizer or emollient 'plus' formulation, and daily broad-spectrum sun protection. Pharmacists can also advise patients to avoid irritants and allergens, monitor emerging skin toxicities, support treatment adherence, and facilitate

referrals when necessary. Open communication between pharmacists and patients supports early identification and management of skin adverse effects throughout the treatment journey.

Conclusion: Community pharmacists can play an important role in the prevention and management of cancer treatment-related skin reactions through patient education, dermocosmetic recommendations, photoprotection counselling, monitoring, and referral. Pharmacist-led interventions have the potential to improve adherence, quality of life, and clinical outcomes, and their implementation should be expanded globally.

Basic guidance and role of community pharmacists in managing drug-related photosensitivity

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Background: Drug-induced photosensitivity is a cutaneous adverse reaction resulting from the interaction between sunlight, predominantly UVA radiation, and topical or systemic medications. It accounts for up to 8% of reported skin-related adverse events and may manifest as phototoxic or photoallergic reactions, often leading to post-inflammatory hyperpigmentation. Numerous medications are associated with photosensitivity, including cardiovascular, psychotropic, antimicrobial, anti-inflammatory, and anticancer agents. Community pharmacists are ideally positioned to identify photosensitizing drugs and provide preventive counseling. However, evidence suggests the existence of knowledge gaps among pharmacy staff regarding photoprotection and sun-safe behaviors. Objective: To develop a practical care algorithm and educational guidance for community pharmacists on counseling patients regarding adapted photoprotection when using photosensitizing drugs.

Method: A literature review on pharmacists' roles in dermatological care and current photoprotection recommendations was conducted in December 2025. An international online survey of FIP members was performed between March and April 2026 to assess current practice, knowledge, and perceived barriers related to pharmacist involvement in skin health. Responses from 142 pharmacists across 51 countries were analyzed. Based on the findings, a global FIP expert panel comprising 13 pharmacists from five continents recommended the development of practical guidance. A pharmacist-centered care algorithm for photosensitivity management was subsequently developed, reviewed with the assistance of the International League of

Dermatological Societies (ILDS) and supported by the International Pharmaceutical Federation (FIP).

Results: The algorithm outlines pharmacist interventions across prevention, management, and follow-up. During dispensing, pharmacists should identify photosensitizing medications, educate patients on comprehensive photoprotection, and recommend broad-spectrum sunscreens with strong UVA protection, tailored to individual skin conditions, habits, and preferences. Counseling includes sun avoidance strategies, including daily exposure to UVA as they are silently reaching skin all day and all year long even penetrating through clouds and windows, and promoting correct sunscreen application and reapplication. In cases of suspected drug-induced photosensitivity, pharmacists should assess medication history, identify potential causative agents, and refer patients presenting severe reactions. For patients unable to discontinue treatment, reinforced photoprotective measures are recommended. Continued photoprotection is advised after treatment cessation because photosensitivity may persist for several months.

Conclusion: Community pharmacists play a key role in the prevention and management of drug-induced photosensitivity through medication review, patient education, monitoring, and promotion of sun-safe behaviors. Practical guidance and targeted training may strengthen pharmacists' confidence and effectiveness in delivering personalized photoprotection counseling.

Basic guidance and role of community pharmacists in skin cancer prevention and photoprotection counseling

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Background: The global incidence of skin cancer is increasing, despite being one of the most preventable cancers. Ultraviolet (UV) exposure is a major risk factor, making photoprotection and early detection essential strategies for prevention. Although photoprotection is recommended for the entire population, particularly for individuals at increased risk of skin cancer or receiving photosensitizing treatments, adherence remains suboptimal. Pharmacy-based educational interventions have been shown to improve knowledge and sun-safe behaviors. However, studies have identified gaps in pharmacists' knowledge regarding sunscreen selection, SPF interpretation, packaging labeling, specificities towards skin phototypes, and UV index use, highlighting the need for practical guidance and targeted education. Objective: To develop a practical care algorithm and educational guidance

for community pharmacists on photoprotection counseling and skin cancer prevention.

Method: A literature review on pharmacists' roles in dermatological care and current photoprotection recommendations was conducted in December 2025. An international online survey of FIP members was carried out between March and April 2026 to assess current practice, knowledge, and perceived barriers to pharmacist involvement in skin health. A total of 142 responses from 51 countries were analyzed. Based on the findings, an expert FIP panel of 13 pharmacists from five continents recommended the development of practical guidance to support pharmacy practice. A pharmacist-centered care algorithm for photoprotection management was subsequently developed, reviewed with the assistance of the International League of Dermatological Societies (ILDS) and supported by the International Pharmaceutical Federation (FIP).

Results: The algorithm identifies key pharmacist interventions in skin cancer prevention and photoprotection: pharmacists can provide education on UV exposure, skin phototypes, and UV index interpretation; promote sun-safe behaviors; and counsel patients on the selection and correct use of sunscreens. Counseling should be tailored to individual risk factors, skin conditions, lifestyle, and patient preferences. Pharmacists can also encourage skin self-examination using the ABCDE criteria and identify situations requiring referral, including suspicious or changing lesions, cases of photosensitivity including drug-induced and polymorphic light eruptions. Additional counseling may be needed for patients with other photosensitive disorders, pigmentary conditions, rosacea, and acne, which all can be worsened by sun exposure.

Conclusion: Community pharmacists can play an important role in photoprotection counseling and skin cancer prevention through patient education, promotion of sun-safe behaviors, personalized sunscreen recommendations, and referral when appropriate.

A forecasting dashboard for reimbursed drug consumption in Belgium: Trends in DDD, volume and expenditure

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Background: Increasing financial pressures and expensive innovative treatments require Belgian health authorities to better anticipate future pharmaceutical needs while ensuring sustainable public spending and continued patient access to reimbursed medicines. Pharmacists play a key role in this context, yet decision makers often lack timely, integrated insights to consumption and expenditure trends. To support

evidence-based policy decisions, the Belgian Association of Pharmacists (APB) developed a forecasting dashboard that provides both historical analysis and forward-looking projections of reimbursed medicines dispensed in community pharmacies. This tool fills an important information gap and supports strategic planning within the Belgian healthcare system. Objective: The objective of this exercise was to develop a forecasting tool capable of generating short-term (2 years) forecasts of reimbursed drug expenditure and consumption in Belgium. The forecast aims to support pharmacists, health authorities and policymakers in anticipating future demands, emerging trends, and understanding potential challenges related to drug availability, healthcare expenditure and patient costs, under the assumption of unchanged reimbursement policies.

Method: Time-series forecasts were developed using national data from 2021 onwards, including DDD, prescription volumes, pharmacists' economical margin, NIHDI expenditures and the patient costs. Data extraction, preparation, modelling, and dashboard generation were performed using R Shiny based on our data base IFSTAT. For each ATC class, multiple forecasting methodologies were applied, including Holt-Winters (HW), Linear extrapolation (LM), ARIMA and Linear extrapolation with seasonality (LMS). The results were integrated into an interactive dashboard that allows users to explore data and forecasts from national aggregates down to ATC class detail.

Results: The dashboard provides a comprehensive visualization of historical trends and projected developments across several key indicators: DDD, prescription volumes, pharmacists' economic margin, NIHDI expenditures, and patient costs. As of February the dashboard shows a continued and stable increase in both DDD and NIHDI expenditures, confirming upwards patterns observed in previous years. In parallel, delivered quantities and unit tariffs remains positive for 2026, with an observable acceleration in growth rate. The divergence between the evolution of DDD and delivered quantities may suggest changes such as an increase in average pack sizes, requiring closer monitoring from a policy of supply perspective. Through interactive exploration across therapeutic classes, the dashboard enables early identification of such emerging patterns, potential budgetary pressures and areas requiring closer monitoring from a policy or supply perspective.

Conclusion: This project demonstrates the value of a multi model and interactive approach to forecasting the consumption of reimbursed medications in Belgium. By combining the current and historical dispensing trends with predictive modelling, the dashboard translates complex data into actionable insights. The tool illustrates how predictive analytics can strengthen the capacity of pharmacists, stakeholders, health authorities and policymakers to monitor trends, anticipate future challenges and support strategic planning in an environment characterized by financial pressure and potential drug shortages.

Contribution of community pharmacies to colorectal cancer screening uptake in western France: Analysis of organised screening programme data

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Background: Colorectal cancer (CRC) is a major public health concern in France. Early detection through screening reduces disease burden; yet patient participation remains below the acceptable European threshold of 45%. Community pharmacists, as accessible and trusted healthcare professionals, play an important role in providing preventive services and encouraging patient participation in screening. However, limited studies explore their involvement in CRC screening, leaving a knowledge gap in the current literature. Therefore, this study aims to evaluate trends in patient participation in CRC screening and the distribution of faecal immunochemical test (FIT) following the integration of community pharmacists into the screening program in 2022.

Method: A retrospective observational study was conducted using data collected by population-based administrative systems (the Cancer Screening Coordination Center and the National Health Data System) in western France between 2019 and 2025. The study population comprised asymptomatic individuals aged 50–74 years with no personal or family history of CRC, who received an invitation and underwent the tests. Descriptive analyses and exploratory stratification by year and sex were performed using IBM SPSS software.

Results: During the study period, 2.9 million patients were invited to participate in CRC screening. Overall participation increased from 548,000 in 2019 (pre-pharmacist inclusion) to 869,000 in 2022 (post-inclusion peak). This expansion was accompanied by a 4.0% ($p<0.01$) rise in annual screening activity and 5.0% ($p<0.01$) increase in overall coverage. Concurrently, rates of unrepeated invalid tests declined 3.0% ($p<0.01$) after 2022, reflecting improved test quality and adherence. The integration of pharmacists also changed the distribution of test delivery channels. The proportion of tests delivered through community pharmacies increased from 0% to 17.8%, while physician-based distribution declined from

100% to 61.3%. Online orders showed also a rise from 0% to 3.0%. Despite these shifts, completion rates for FIT tests remained comparable across all channels. Sex-specific patterns emerged in test distribution across channels. Tests were obtained through pharmacists or physicians by 55.0% of women and 45.0% of men. Online orders were placed by 57.0% of men and 43.0% of women. Both differences were statistically significant ($p<0.01$).

Conclusion: Community pharmacists have become an increasingly important contributor to the CRC screening programme in western France. They provide alternative points of care and convenient delivery channels, increasing access for many individuals. Sex-specific behavioural differences suggest that women may prefer pathways involving professional interaction, whereas men may prioritise convenience, discretion, or autonomy. Tailoring strategies to these preferences—such as optimising online channel for men and advancing access to in-person, healthcare professional-based delivery for women—could enhance overall screening coverage. Furthermore, strengthening the role of pharmacists through targeted training and resources could help unlock their full potential. This could further promote their integration into public health initiatives, improve early screening and enhance equity in population-level CRC outcomes.

Commissioning community pharmacy-based prescribing services in England: Insights from multi-stakeholder focus groups

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Background: The Community Pharmacy Independent Prescribing (IP) Pathfinder Programme was launched in 2024 by NHS England to test how community pharmacy-based NHS prescribing services can be implemented to improve patients' access to care. Over 190 sites took part in the programme, delivering over 33,000 clinical consultations for acute illness and long-term conditions. As the programme concluded in December 2025, lessons learnt from its delivery are shaping its future commissioning and implementation plans.

Objective: This evaluation sought to explore diverse, sector-wide stakeholders' perspectives on the contextual levers, essential commissioning requirements and preferred models of delivering community pharmacy-based NHS prescribing services.

Method: Nine focus group discussions were carried out online, between February and June 2025, involving diverse stakeholders including Integrated Care Boards' community

pharmacy clinical leads, pharmacy and primary care commissioning representatives, primary care leads, local pharmaceutical committee leads, community pharmacy indemnity providers, small, medium and large community pharmacy chains representatives and others. Over 80 participants took part, and the focus groups lasted an average of 90 minutes. The focus groups were recorded and transcribed verbatim via Microsoft Teams. The transcripts were anonymised, and the data was managed using QSR NVIVO qualitative data management package and analysed using framework analysis.

Results: Three themes emerged as critical contextual levers influencing the commissioning and successful implementation of future NHS prescribing services in community pharmacy including: community pharmacy's relationship with General Practices (GPs), public awareness of independent prescribing in community pharmacy and acknowledging that community pharmacy is a "stranger" in primary care. Five themes were identified as essential requirements within a future commissioning model including: Financial support, monitoring delivery, prescribers' capacity, digital infrastructure and access to pathology services. Prescribing services in community pharmacy should be nationally and locally commissioned, whereby national standards of services are set, with flexible decision making for integrated care boards to commission services based on local needs and deliver diverse IP models to serve local communities.

Conclusion: The NHS England Community Pharmacy Independent Prescribing Pathfinder Programme has proven the feasibility of commissioning and implementing NHS prescribing services in community pharmacy. As community pharmacy continues to evolve towards a more clinical, patient-focused setting and a key clinical partner within the primary care team, commissioners can seize this exciting opportunity to expand capacity in primary care and harness the full potential of community pharmacy's accessibility and skillset. This growth can only happen if community pharmacy has the necessary funding and digital infrastructure and is well integrated with the rest of the healthcare system. A collaborative relationship with GPs is essential to community pharmacy's integration within primary care. An integrated primary care removes barriers preventing people from accessing care and has a complementary skill set that is able to meet the needs of diverse communities, right where they live.

Bridging the gap in geriatric care: A scalable pharmacist-led multidisciplinary model for medication safety across 28 adult daycare centers

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Background: Elderly individuals in adult daycare centers face significant medication risks due to polypharmacy and complex dosage regimens. In Changhua, daycare facilities often struggle with inadequate medication storage, fragmented documentation, and a lack of professional pharmacy oversight. These factors collectively increase the risk of adverse drug reactions and falls among the vulnerable elderly population.

Objective: This project aimed to establish a standardized, tripartite medication management model by integrating administrative resources from the health bureau, academic clinical support from hospitals, and the local accessibility of community pharmacies to eliminate medication safety "pain points".

Method: A structured four-stage implementation strategy was executed: Assessment: Pharmacists conducted on-site evaluations of current practices across pilot facilities. Standardization: Developed unified Standard Operating Procedures (SOPs), including "Long-term Care Medication Profiles" and "Standardized Administration Records". Pilot & Iteration: Initial trial in 3 pilot centers with iterative refinement. Scaling & Expansion: The model was successfully scaled to 28 institutions (25 existing facilities plus 3 new centers), with a long-term strategic goal to cover all 80 daycare centers within the county.

Results: Pharmacist intervention led to significant improvements in all safety indicators. Compliance for dedicated medication preparation spaces and individual storage cabinets rose from a baseline of 44% to 100%. The completion rate for the "Long-term Care Medication Profile", a standardized document integrating drug images and administration notes, also reached 100%. Qualitative evidence from on-site audits confirmed a total transition from disorganized environments to professional, pharmacy-grade storage and administration systems.

Conclusion: The "One Daycare, One Pharmacist" model demonstrates that structured pharmacist intervention, supported by administrative synergy, can successfully standardize complex medication processes. This scalable model provides a practical framework for enhancing geriatric pharmaceutical care and can be adapted by other regions facing similar aging population challenges.

An internal cross-departmental podcast strengthening pharmacy practice through expert insights and patient perspectives

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Background: As Norway's largest pharmacy chain, Apotek 1 operates around 460 pharmacies and employs 5,000 people across a geographically dispersed network. This creates a need for scalable, consistent and accessible competence development to ensure all employees receive updated knowledge. In addition to established training programmes, Apotek 1 identified a need for more flexible and timely learning formats. Rx-podden was therefore launched in 2019 as a low-threshold internal learning channel designed to supplement existing education by offering accessible knowledge updates that can be easily integrated into daily work routines.

Objective: The purpose of Rx-podden is to strengthen the professional knowledge base of pharmacy employees by providing concise, high-quality learning content that supports better decision-making and confidence in patient-centred counselling. The podcast also aims to ensure consistent competence development across the organisation and foster a shared understanding of priority therapeutic and service areas.

Method: A multidisciplinary editorial team meets every six weeks to plan, evaluate and quality-assure episodes. The team includes representatives from the competence department, the RX-category department, the pharmaceutical department and the communication and marketing division, ensuring complementary expertise and relevant topics. Episodes are recorded in Apotek 1's dedicated podcast studio. Content focuses on diseases, medicines, patient perspectives and strategic areas such as health services and public health. Both external experts and internal employees, from pharmacy staff to administrative specialists, contribute practical insights, and episodes are deliberately designed to provide actionable tips employees can use directly in their daily consultations. Episodes are designed to last around 20 minutes, aligning with employee preferences for short, focused learning sessions. Rx-podden is published through Apotek 1's digital learning platform and internal information hub, ensuring easy access during work breaks, commutes or at home. Feedback is collected regularly from pharmacies and internal stakeholders and is systematically used to refine topics and improve episode quality.

Results: As of March 2026, 76 episodes have been produced across diverse therapeutic and practice-related topics. Episodes receive 600–700 listens on average, amounting to more than 50,000 total plays. The podcast format works well as a learning tool because it is short, focused, easy to access

and tightly connected to real counselling situations. Pharmacies highlight strong appreciation for expert quality, patient stories, relevant content and practical applicability. Among the most listened-to episodes are "Healthy lifestyle, weight and health", "Medicine shortages" and "Inhaler technique and supporting the asthma patient". While these episodes attract the highest listener numbers, patient-centred episodes, such as those on migraine, overweight and dementia, are especially well-received and consistently generate positive feedback. The podcast has also strengthened organisational cohesion by creating a shared learning arena across Norway's most geographically spread pharmacy workforce.

Conclusion: Rx-podden demonstrates how an internal podcast can function as an effective, scalable and engaging learning tool within a large and geographically dispersed pharmacy chain. By combining expert insight, lived patient experiences and cross-departmental collaboration, the podcast strengthens employees' knowledge base and supports their confidence in delivering patient-centred counselling. The model offers valuable insights for organisations seeking flexible, high-impact approaches to continuous professional development.

Beyond the prescription: Medicines access and non-pharmaceutical self-management among migraine patients in crisis-affected Lebanon

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Background: Medicines access for patients with chronic neurological conditions extends far beyond the prescription, it depends on supply chain integrity, insurance coverage, and the resilience of the healthcare system. In Lebanon, where intersecting crises have simultaneously eroded all three,

migraine patients face compounded barriers to maintaining consistent prophylactic and acute treatment. Migraine demands sustained long-term management, yet how patients in resource-constrained, crisis-affected settings obtain their medications remains uncharacterised. This study aimed to map medication sourcing pathways, quantify non-pharmaceutical treatment adoption and perceived effectiveness, and determine whether structural barriers, cost and medicines inaccessibility, are associated with self-management beyond patient preference alone.

Method: A cross-sectional study was conducted among 614 migraine patients on prophylactic and/or acute antimigraine treatment for ≥ 6 months, from all eight Lebanese governorates. Medication sourcing was assessed across six channels including community pharmacy, hospital pharmacy, humanitarian aid or donations, and online/informal sources. Non-pharmaceutical treatment adoption was assessed across nine modalities, with perceived effectiveness rated on a 5-point Likert scale and motivating reasons captured across seven domains. Descriptive statistics were used; chi-square tests and independent t-tests identified significant sociodemographic associations ($\alpha=0.05$).

Results: Community pharmacies remained the primary medicines access point (97.1%, 95%CI 95.7%–98.4%); however, 6.8% (95%CI 4.8%–8.8%) sourced medications from unverified or humanitarian channels, a patient safety signal amplified by the finding that unverified sourcing was significantly more prevalent among low-income patients (income $< \$500$ /month: 13.3% vs income $\geq \$2,000$ /month: 2.2%; $p=0.016$). This risk is further compounded by 39.4% (95%CI 35.5%–43.3%) carrying no health insurance and 44.3% (95%CI 40.4%–48.2%) reporting household incomes below \$1,000/month. Non-pharmaceutical treatment adoption was near-universal: regular sleep scheduling (73.0%, 95%CI 69.5%–76.5%), stress management (63.8%, 95%CI 60.0%–67.6%), dietary modifications (51.0%, 95%CI 47.0%–54.9%), relaxation techniques (48.9%, 95%CI 44.9%–52.8%), and massage therapy (46.6%, 95%CI 42.6%–50.5%) were most frequently adopted. While personal preference (54.7%, 95%CI 50.8%–58.7%) and side effect concerns (47.9%, 95%CI 43.9%–51.8%) were the most frequently self-reported motivators, cost was cited by significantly more low-income than high-income patients as a driver of non-pharmaceutical uptake (32.2% vs 6.7%; $p=0.001$), confirming that for a substantial minority, self-management is structural necessity, not choice.

Conclusion: Lebanese migraine patients are building parallel treatment ecosystems in the shadow of a failing healthcare system: sourcing medications from unverified and humanitarian channels, and adopting non-pharmaceutical strategies driven not solely by preference but by structural inaccessibility and unaffordability. With 39.4% uninsured and pharmacists representing the most accessible healthcare touchpoint in Lebanon's crisis landscape, these findings define an urgent and actionable role for pharmacy: structured medicines access counselling, integration of evidence-based non-pharmaceutical strategies into chronic disease

management, and patient safety vigilance at the point of dispensing. Pharmacy-led intervention is not supplementary, it is the primary line of response.

Can pharmacist intervention improve asthma and COPD care? Yes, it can

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Background: In Quebec (Canada), the scope of practice of pharmacists is being gradually expanded to allow them to contribute more concretely to the care of their patients with chronic diseases such as asthma and chronic obstructive pulmonary disease (COPD). Despite their expanded scope of practice, there is a lack of confidence, comfort, and expertise among pharmacists when it comes to intervening in the treatment of asthma and COPD. A project, known as Programme d'optimisation du traitement de l'asthme et de la MPOC (POTAM), was developed to optimize the treatment of asthma and COPD by community pharmacists. Its objective is to raise awareness and mobilize pharmacists to intervene more with these patients.

Objective: The primary objective of POTAM is to provide pharmacists with the knowledge and skills to effectively identify their patients with asthma or COPD who require intervention. POTAM's training and resources are designed to empower pharmacists to confidently engage with patients experiencing symptoms or whose treatment is suboptimal to improve their quality of life, which is a key aspect of managing chronic respiratory diseases.

Method: A group of 13 pharmacists was recruited to participate in the pilot phase of POTAM. To enhance their expertise regarding treatment guidelines and potential intervention situations, participating pharmacists underwent a training webinar. Thereafter, they were allotted a period of six months to provide structured interventions to their patients diagnosed with asthma or COPD using the clinical tools developed for the program.

Results: During the six-month pilot project, the participating pharmacists identified 206 intervention situations involving 58 patients with asthma leading to 106 interventions by the pharmacist (e.g., modification of regular or rescue treatment, corrected inhalation technique, medication substitution). They also identified 438 intervention situations involving 88 patients with COPD that led to 212 interventions (e.g., treatment modification, vaccination, medication substitution, smoking cessation). Impact of pharmacist interventions Patients with asthma: A total of 75.6% of patients with uncontrolled asthma met the criteria for asthma control following pharmacist intervention. Adherence to maintenance therapy was improved in 56.7% of non-

adherent patients, while an improvement in inhalation technique was noted in 22.2% of patients encountering challenges with their inhalers. Additionally, 30% of patients who smoked accepted support for smoking cessation, and 51.9% of patients who were offered vaccination agreed to receive it. Patients with COPD: 70.3% of patients reported improvement in their symptoms following the pharmacist's intervention. Adherence to maintenance therapy was improved in 69.4% of non-adherent patients, while an improvement in inhalation technique was observed in 58.3% of patients encountering challenges with their inhalers. In addition, 42.3% of patients who smoked accepted help to quit smoking, and 74.5% of patients who were offered vaccination agreed to receive it.

Conclusion: The pilot phase of POTAM demonstrated that, with adequate training, clinical tools, and a structured assessment approach, pharmacists can intervene more efficiently to improve the clinical outcomes of patients with asthma and COPD. Given these findings, the potential for large-scale delivery of POTAM should be considered.

Real-World Oral Corticosteroid Treatment Patterns in Portuguese SLE Patients: Final Results from the TRANSfORM Study

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Background: Systemic lupus erythematosus (SLE) is a chronic autoimmune disease affecting roughly 0.1% of the Portuguese population, characterized by relapsing flares and multi-organ involvement. Oral corticosteroids (OCS) remain central to therapy, yet long-term use and doses > 5 mg/day (prednisone equivalent) increase irreversible organ damage and diverge from current EULAR/ACR recommendations. This analysis provides the interim results of the TRANSfORM study, describing real-world OCS treatment patterns among Portuguese adults with SLE managed in community pharmacies.

Method: TRANSfORM is a multicenter, cross-sectional observational study in Portuguese community pharmacies affiliated with the National Association of Pharmacies (ANF). Adults with self-reported, physician-diagnosed SLE were recruited by trained pharmacists after written informed consent, identified via a hydroxychloroquine prescription trigger, pharmacist-identified possible SLE, or patient self-referral. Inclusion required current or prior OCS use or an OCS prescription. Recruitment started 4 June 2025, is ongoing, and targets 305 patients. Data were collected via an electronic case report questionnaire on sociodemographic, clinical, and pharmacological variables. Analyses used descriptive statistics.

Results: Preliminary findings use a data cut of 203 enrolled patients (mean age 56.3 ± 13.7 years; 87.2% female; 96.0% Caucasian). At enrolment, 88.2% were receiving hydroxychloroquine (n=179). Overweight/obesity prevalence was 60.1%, and 83.3% had ≥1 comorbidity (primarily hypertension 43.8%, skin disorders 42.4%). Mean age at SLE diagnosis was 40.4 years. At recruitment, 52.7% (95% CI 45.8–59.6) were on OCS (50.2% starting, 0.5% ongoing, 2% uncertain with a current prescription), 39.9% were not on OCS, and 7.4% were unsure without a prescription. Among OCS users (n=107), 47.7% initiated OCS due to a flare and 95.3% reported previous OCS exposure. Among OCS users (n=107), prednisolone was most common (83.2%), followed by deflazacort (13.1%). Prescribing was predominantly by rheumatologists (57.9%) and internists (24.3%). Long-term use (≥3 months) was frequent (87.9%); mostly fixed dose (58.9%). Among fixed-dose users (n=63), 32.8% received >5 mg/day (prednisone equivalent).

Conclusion: Interim findings show substantial, prolonged OCS use in Portuguese adults with SLE, many on fixed-dose regimens. Nearly one-third of fixed-dose users exceed the recommended maintenance threshold (>5 mg/day prednisone equivalent). Recruitment is ongoing to a target of 305 participants; final results will be presented at the 84th FIP World Congress of Pharmacy and Pharmaceutical Sciences, providing an updated RWE overview of OCS use, and underscoring the ongoing need for corticosteroid-sparing strategies to optimize SLE care in Portugal.

Factors associated with declining interest in community pharmacy in Bizkaia: A cross-sectional study among non-owner pharmacists

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Background: In recent years, community pharmacy in Bizkaia (Spain) has faced increasing difficulties in attracting and retaining non-owner pharmacists, despite the continuous

availability of pharmacy graduates. This situation suggests the presence of structural and organisational barriers that negatively influence professional satisfaction and career sustainability. Evidence from healthcare settings indicates that inadequate working conditions, limited professional recognition and poor work–life balance contribute to workforce instability and may compromise the quality of care provided. Objective: The objective of this study was to analyse the employment conditions of non-owner community pharmacists in Bizkaia, identify factors associated with declining interest in this professional field, and determine priority areas for improvement to enhance its attractiveness and sustainability.

Method: A descriptive cross-sectional observational study was conducted using an online questionnaire addressed to non-owner community pharmacists currently practising in Bizkaia, as well as to professionals who had previously left this sector. The target population consisted of 917 pharmacists. Data collection took place between April and May 2024 through a survey distributed by the Official College of Pharmacists of Bizkaia. The questionnaire included 81 closed- and open-ended questions covering employment conditions, remuneration, work–life balance, professional recognition, human resource management and career expectations. Several items were assessed using Likert-type scales. Quantitative data were analysed using descriptive statistics, including frequencies, percentages, means and 95% confidence intervals. The internal consistency of the Likert-scale items was evaluated using Cronbach's alpha.

Results: A total of 336 valid responses were obtained from pharmacists with a mean of 15.7 years of experience in community pharmacy. Overall, 59.2% of respondents reported job dissatisfaction and 74.1% indicated inadequate work–life balance. Regarding remuneration, 81.3% stated that their salary did not allow them to live comfortably, and 93.2% considered it disproportionate to their level of responsibility. Likert-scale analysis revealed low mean satisfaction scores for annual working hours (1.63 ± 0.99), work schedule (1.99 ± 1.15) and work–life balance (1.99 ± 1.06). Access to pharmacy ownership was also poorly rated (1.70 ± 1.04). In contrast, perceived support from colleagues obtained the highest score (3.91 ± 1.11). Deficiencies in human resource management were frequently reported, including replacement of pharmacists with non-pharmacist staff and lack of coverage during prolonged absences. Most participants (89.3%) believed these practices negatively affected the quality of pharmaceutical care. Additionally, 77.4% reported having experienced violent incidents at the pharmacy counter, and 81.0% had considered leaving the community pharmacy sector. The Likert-scale demonstrated acceptable internal consistency (Cronbach's alpha = 0.76).

Conclusion: Non-owner community pharmacists in Bizkaia experience widespread professional dissatisfaction primarily related to unfavourable working conditions, non-competitive salaries, limited recognition and poor work–life balance. These structural factors strongly contribute to turnover intentions and threaten the sustainability of the community

pharmacy care model. Addressing organisational practices, strengthening human resource management and reinforcing the professional role of pharmacists are essential to improve workforce retention and ensure high-quality pharmaceutical care.

Implementing community pharmacy-based HIV prophylaxis (PrEP/PEP) in Aotearoa New Zealand: A proof-of-concept implementation study

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Background: Community pharmacies are accessible, trusted primary care providers with strong reach into priority populations and are therefore well placed to widen access to HIV prophylaxis (PrEP/PEP), a key intervention in Aotearoa New Zealand's National HIV Action Plan to eliminate local HIV transmission by 2030. Despite PrEP/PEP reducing HIV acquisition risk by up to 99%, access remains inequitable, particularly for people who experience barriers to traditional prescriber-initiated models. International evidence and implementation research highlight pharmacist knowledge, workflow integration and structured implementation strategies as critical for successful pharmacy-based prophylaxis delivery, yet this service model has not previously been implemented or evaluated in New Zealand community pharmacy practice. Objective: To evaluate the feasibility, acceptability and early implementation outcomes of a pharmacist-led HIV prophylaxis service model delivered as a community pharmacy service in Aotearoa New Zealand.

Method: A 12-week proof-of-concept implementation study was undertaken across five community pharmacies using a mixed-methods practice research design. Pre-implementation activities included finalisation of a six-step prophylaxis consultation pathway, pharmacist clinical training with pre- and post-training knowledge and confidence assessments, whole-of-team orientation, development of standardised data-capture templates, and confirmation of laboratory access and medicine stock readiness. Implementation strategies comprised local site champions, fortnightly in-pharmacy huddles, monthly cross-site learning sessions, a clinical advisory escalation pathway, and an implementation log to document barriers, facilitators and adaptations. Data sources included counts of consultations (assessments, initiations, refills, discontinuations), pharmacist reflective notes and structured end-of-phase pharmacy team debriefs, to assess service

delivery, workflow integration and implementation determinants.

Results: Implementation outcomes include feasibility (uptake, reach and completion of consultations), acceptability (pharmacist and team perceptions of the service) and appropriateness (fit with community pharmacy scope and workflow), alongside changes in pharmacist knowledge and confidence. Qualitative data from reflective notes, huddles and team debriefs identifies key barriers and facilitators (e.g. workflow pinch points, staffing constraints, information technology challenges, client engagement) and cross-site adaptations made during implementation. Together, these mixed-methods data provide early evidence on the feasibility and sustainability of pharmacist-led HIV prophylaxis provision as a community pharmacy service and on the implementation strategies required to support and scale this model.

Conclusion: This proof-of-concept implementation study generates early evidence on the feasibility, acceptability and appropriateness of pharmacist-led HIV prophylactic services in New Zealand community pharmacies and on how these services can be integrated into routine practice. Insights regarding core versus adaptable components of the service model and the implementation strategies needed inform refinement, guide future effectiveness and scale-up research, and support national efforts towards eliminating local HIV transmission by 2030.

Antibiotic Prescribed for Upper Respiratory Tract Infections In a Primary Care Setting: A Retrospective Study In National University Polyclinics

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Background: Inappropriate antibiotic prescribing, predominantly for Upper Respiratory Tract Infections (URTIs), contributes to antimicrobial resistance. We aim to describe patient and prescriber-related variables associated with antibiotic prescribing for URTIs at National University Polyclinics (NUP), to guide potential improvements in antimicrobial stewardship efforts.

Method: De-identified data of patients (≥21 years) coded as being seen for URTI and prescribed antibiotics at seven NUP polyclinics between October and December 2023 were reviewed. Patients inaccurately coded as URTI, or with concurrent infections requiring antibiotics or incomplete documentation were excluded. Variables collected include

patient demographics, relevant comorbidities (defined in our study as Diabetes Mellitus and Chronic Kidney Disease), symptom characteristics, and prescriber details. Statistical analysis including descriptive statistics as appropriate, based on normality testing of data, was employed.

Results: Out of 34,902 URTI encounters, 2,371 (6.79%) were prescribed antibiotics and 1,364 were included. Majority were Chinese (71.0%), females (53.2%), with a median age of 49 years (IQR 35, 63). Most patients had no travel history (92.6%), no contact history (90.2%), and no relevant comorbidities (78.3%). The most common reported symptoms were cough (92.2%), sore throat (60.6%), and runny nose (54.5%). High symptom burden (median 3 symptoms; IQR 2, 4) and longer duration of symptoms (median 7 days; IQR 4, 14) appeared to be associated with antibiotic prescribing. There were 982 patients (72.0%) who reported three or more symptoms, including 544 (39.9%) with four or more and 223 (16.3%) reporting five or more symptoms. Majority of prescriptions were issued by family physicians (55.9%) and those trained overseas (61.9%). Prescribers with 10 to 19 years of experience comprised the largest proportion (37.7%) compared to others. There were 13.9% repeat consultations. 12.0% of patients requested for antibiotics.

Conclusion: Over a 3-month period, more than a thousand patients seen for URTI symptoms were prescribed antibiotics. Patient- and prescriber- education, in particular addressing concerns on symptom burden, duration of URTI symptoms and patient expectations, are important. Antimicrobial stewardship efforts must be further optimised to reduce inappropriate use of antibiotics in primary care.

Patient Experiences of Alberta Pharmacist Primary Care Clinics in Canada: A Mixed Methods Study

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Background: An emerging primary care model for pharmacists in Canada, is the Pharmacist Primary Care Clinic. This model in Alberta, Canada is housed within a community pharmacy but is distinct and separated from the usual pharmacy consultation area. Pharmacist Primary Care Clinics are defined by adequate clinical staffing of pharmacists, designated waiting and reception area with a receptionist, online booking system, private consultation rooms, and use

of an electronic medical record. The accessibility of pharmacist clinical service, pharmacists' scope of practice, and pharmacy operation regulations have not changed with this model of care, but the infrastructure, staffing, and public awareness changed. As part of a larger pragmatic evaluation of Alberta Pharmacist Primary Care Clinics, this study evaluated patients' experience of attending these clinics as walk-ins or appointment visits.

Method: A mixed-methods exploratory study was conducted between October 2024–2025. Recruitment was facilitated through flyers placed in the waiting room of participating clinics. Adult patients attending participating clinics completed an electronic survey before and after their appointment with a pharmacist. Recruited patients could also participate in online interviews (30–45 minutes), transcribed verbatim. Survey data were reported using descriptive statistics, and qualitative data using thematic analysis.

Results: A total of 178 patients completed the pre/post survey; 16 participated in interviews. Participants were predominantly women (56.7%), had a regular physician (65.7%), and had attended the clinic previously (51.1%). Most attended for their own health concerns (86.5%), primarily upper respiratory tract conditions/infections (29.1%), chronic cardiovascular conditions (18.5%), and acute renal/urologic conditions (11.2%). Five qualitative themes emerged: (1) Expanded understanding of pharmacist scope; (2) Clinic augmented existing healthcare services; (3) Convenience and accessibility; (4) Private encounters; and (5) Patient perception of pharmacists shifted to relational. All of the patients described how they felt the Pharmacist Primary Care Clinic augmented their primary care services and convenience was the biggest rationale for attending. The patients' perception and expectations of the pharmacist were different in the Pharmacist Primary Care Clinic, centering on 'Privacy'. While all pharmacies in Alberta have private consultation rooms, patient interactions typically begin at the dispensing counter and rely on the pharmacist's discretion to move to a private room. Established norms set the stage for interactions to remain at the dispensary, particularly as patients are often unaware of private rooms and rarely request them. Conversely, Pharmacist Primary Care Clinics are characterized by default privacy, ensuring that the entire clinical encounter occurs within a private room.

Conclusion: Overall, the patient experience was extremely positive, though it was offset by limited prior expectations regarding pharmacists' scope of practice. Patient perceptions shifted meaningfully within the Pharmacist Primary Care Clinic, with 'Privacy' emerging as the catalyst for transforming the pharmacist interaction from a transactional to a relational one.

Perational impacts of extreme weather on community pharmacies: A Canadian environmental scan

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Background: The climate crisis has intensified the frequency of extreme weather events, threatening global medication access and healthcare continuity. While the WHO and FIP advocate for climate-resilient pharmacy services, on-the-ground hazard assessments remain scarce. In Canada, community pharmacies are vital health hubs during emergencies, yet disaster planning requirements vary by province, and there is limited data on how these events disrupt pharmacy operations and patient's access to timely care. Objective: To identify the frequency and duration of weather-related closures in specific Canadian regions affected by significant flooding or wildfires within the past five years - in order to better inform and support community pharmacy disaster planning frameworks

Method: A cross-sectional telephone environmental scan was conducted involving staff at 96 community pharmacies across four provinces experiencing extreme weather events over the past five years. Provinces included for this exploratory analysis were British Columbia (n=47), Alberta (n=21), New Brunswick (n=16), and Nova Scotia (n=12). Pharmacy staff were asked whether their pharmacy had experienced extreme weather-related closures within the past five years and, if so, the approximate duration of the closure(s). Available qualitative data on specific factors surrounding closures were also noted if shared by the participants.

Results: Of the 96 pharmacies contacted, 21 could not confirm status due to recall limitations. Of the remaining 75 pharmacies, 33 (44%) reported at least one weather-related closure within the past five years. Among these, duration varied significantly: 15 pharmacies reported short-term closures of less than one week, which included 4 lasting less than a single day. An additional 12 pharmacies experienced mid-term closures ranging from one to two weeks while 6 reported extended closures of approximately one month or longer. Longer closures (>4 weeks) were more frequently described in areas affected by wildfires. Qualitatively, themes included lack of power and EMR backup, staff availability and communication, and the need for disaster-specific inventory management, highlighting key opportunities to further strengthen disaster planning strategies.

Conclusion: In this purposive sample, temporary closures ranged from less than one day to more than one month. These findings highlight that operational disruptions, regardless of length, frequently occur during climate-related events. This underscores a valuable opportunity to enhance

systemic disaster planning and business continuity frameworks, ensuring community pharmacies remain resilient and accessible during an escalating climate crisis. Disruptions as short as less than 24 hours can result in critical gaps to essential pharmacy services which can significantly jeopardize patient care, particularly for those requiring time-sensitive medications. Therefore, disaster mitigation strategies must account for the full spectrum of closure durations, from short term to prolonged impacts. Limitations include a reliance on staff recall and the exclusion of northern, remote, and Indigenous-serving pharmacies. Future mixed-methods research incorporating weather pattern analysis is necessary to further characterize system-level impacts. Ultimately, these findings serve as critical insights for policy discussions aimed at strengthening the long-term resilience and emergency preparedness of community pharmacy practice across Canada.

A Two-Year Branch Performance Scorecard Integrating Sales, Gross Margin, and Value Added Tax Indicators in a Thai Community Pharmacy Chain (2024–2025)

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Introduction: Community pharmacy chains require practical benchmarking tools that combine financial performance with tax-related cash-flow indicators. However, branch comparisons are often fragmented across separate reports, limiting managerial actionability. To develop and apply a two-year branch performance scorecard integrating sales, gross profit, gross margin, and value-added tax (VAT) indicators, and to classify branches into actionable performance archetypes.

Methods: A retrospective managerial analytics study was conducted using annual branch summaries (excluding VAT) for five branches (codes 00–04) in 2024 and 2025. Core measures comprised sales (excluding VAT), cost (excluding VAT), gross profit (excluding VAT), and gross margin (GM; gross profit divided by sales, %), alongside VAT output, VAT input, and VAT payable. Year-on-year (YoY) changes were calculated for sales and gross profit; GM change was expressed in percentage points. A scorecard was constructed using min–max normalisation to generate 0–100 sub-scores for (1) growth (average of sales YoY and profit YoY), (2) margin (average of 2025 GM and GM percentage-point change), and (3) tax footprint (2025 VAT payable, Thai baht; THB). The overall score used editable weights (default: growth = 0.35, margin = 0.45, tax footprint = 0.20). Branches were grouped by median-split quadrants (growth vs. margin) and illustrated using k-means clustering (k=3) applied to growth and margin scores.

Results: Branch 02 ranked first overall, demonstrating positive growth (sales YoY +6.66%; gross profit YoY +10.96%) and the highest 2025 GM (52.58%). Branch 00 ranked second, with sales contracting (–4.89%) but gross profit improving (+1.15%), accompanied by a large VAT remittance (VAT payable 385,524 THB in 2025) and a substantial GM improvement (+2.94 percentage points). Branch 01 (head office) ranked lowest, with declines in sales (–11.63%) and gross profit (–14.39%) and the lowest 2025 GM (46.40%). The scorecard differentiated “grow-and-earn” branches from “contracting-and-declining” branches and highlighted high-VAT-remittance branches for cash-flow and compliance prioritisation.

Conclusion: A concise, operational scorecard integrating growth, margin, and VAT footprint enabled transparent benchmarking and actionable branch archetypes using routine financial summaries. This framework can support resource allocation, targeted performance reviews, and VAT-related cash-flow planning in community pharmacy chains.

Daily Gross Profit Volatility, Seasonality, Temporal Dependence, and Regime Shifts in a Thai Community Pharmacy Branch: A Two-Year Observational Analysis (2024–2025)

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Introduction: Community pharmacies are typically evaluated through monthly financial summaries, but these often overlook daily fluctuations that impact staffing, inventory management, and promotions. There is limited evidence on the dynamics of daily gross profit in routine operations, particularly in middle-income settings. This study aims to quantify daily gross profit volatility, analyse seasonal trends by day and month, assess temporal dependencies using autocorrelation, and identify regime shifts via change-point detection using regular sales and cost data.

Methods: A retrospective observational study analysed daily aggregated reports from the head branch of a Thai community pharmacy chain over 366 days in 2024 and 365 days in 2025. The study measured daily sales, costs, gross profit, and gross margin (GM). Volatility in daily sales and gross profit was assessed using the coefficient of variation (CV). Mean daily gross profit was calculated for each day of the week, with dispersion indicated by standard deviation (SD). Monthly seasonality was evaluated by totalling gross profit for each month. Temporal dependence was examined through autocorrelation of daily gross profit at lag 1 (previous day) and lag 7 (weekly cycle). Potential regime shifts were identified using mean-shift segmentation with a minimum segment length of 30 days and visualised against a 30-day moving average.

Results: Total annual sales dropped from 12,578,880 THB in 2024 to 11,963,651 THB in 2025, a decrease of 4.89%. In contrast, total gross profit rose from 5,825,959 THB to 5,893,009 THB, reflecting a 1.15% increase, with the mean daily gross margin increasing from 47.68% to 49.48%. Sales stability improved, as indicated by a decrease in daily sales volatility (CV down from 0.406 to 0.232), while daily gross profit volatility increased slightly (CV up from 0.189 to 0.212). The highest gross profits were recorded on June 20, 2024 (32,418 THB), and June 2, 2025 (29,095 THB), while the lowest were on April 13, 2024 (6,844 THB), and April 15, 2025 (3,828 THB). In 2025, autocorrelation increased, indicating stronger day-to-day persistence, with lag 1 correlation rising from 0.168 to 0.364. Weekday patterns showed higher mean gross profits on Sundays and Mondays in 2024, shifting to predominantly Mondays in 2025. Monthly summaries revealed seasonal influences, especially in January and December, with lower earnings during the mid-April holidays. Change-point detection identified several potential regime shifts on January 30, 2024; October 9, 2024; November 18, 2024; February 12, 2025; May 18, 2025; and November 7, 2025.

Conclusion: Daily-level analytics demonstrated margin resilience despite reduced sales, alongside structured volatility, weekly dependence, and candidate regime shifts. Embedding routine daily monitoring, including autocorrelation and change-point detection, may strengthen operational decision-making in community pharmacy by informing staffing, stock buffering, and promotion timing during periods of higher risk.

Re-engineering Community MTM: Integrating Generative AI and Design Thinking to Enhance Patient-Centered Care and Seamless Referrals in a Super-Aged Society

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Background: Ang Thong province is confronting a “super-aged society,” where community-pharmacy patients—particularly older adults with multimorbidity—often have unrecognized illness experiences (e.g., fear of medicines, social isolation) that may be missed in conventional Medication Therapy Management (MTM). Traditional MTM workflows can be constrained by documentation burden and limited standardized communication with hospitals, contributing to fragmented care. Objectives: To develop and

preliminarily evaluate the feasibility of a redesigned community-pharmacy MTM workflow (“MyRx Family: Angthong Model”) that combines Design Thinking and Patient-Centered Care (PCC) principles with Generative AI-assisted documentation and referral support.

Methods: This single-site feasibility pilot/case series redesigned MTM using the Design Thinking framework (Empathize, Define, Ideate, Prototype, Test), shifting clinical practice toward a 6-component PCC process emphasizing the patient’s illness experience. Pharmacists used an AI-enabled platform (Looloo Health) to capture consultations via voice and generate structured SOAP notes and standardized referral forms. The model was implemented at Siwaporn Pharmacy from March 2025 to January 2026 for patients of all ages presenting with complex drug-related problems (DRPs).

Results: Thirteen complex cases (ranging from autism with diabetes to geriatric chronic kidney disease [CKD]) were managed. In an internal comparison of referral content, AI-assisted referrals contained approximately 2.7 times as much contextual detail (notably social history and emotional context) as manually prepared materials, and the workflow reduced the practical burden of documentation while improving standardization. Clinically, pharmacists identified and addressed high-risk DRPs, including intercepting requests for NSAIDs/nephrotoxic herbs among CKD patients and managing cases requiring urgent escalation. Improvement in renal function (eGFR) was observed in 15.4% of cases following pharmacist intervention and referral, and glycemic control was stabilized in a complex autism–diabetes case through caregiver-focused counseling. The standardized AI-generated forms supported bidirectional communication and “loop closure” with hospital specialists, enabling timely action in situations such as fluid overload and polypharmacy.

Conclusion: Integrating Generative AI-assisted documentation within a PCC- and Design Thinking–based MTM workflow appears feasible in a community pharmacy setting. It may strengthen referral quality and continuity of care by providing a more complete clinical context and improving standardization. Given the small sample size and pilot design, larger multi-site evaluations with predefined process metrics (e.g., documentation time, referral completeness, loop-closure rates) and robust clinical endpoints are warranted before drawing definitive conclusions about effectiveness.