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**QUALIFICATION WORK**

on the topic: «**Analysis of trends in the pharmaceutical care and pharmacy services in Europe**»

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## ANNOTATION

The qualification work is devoted to the study of trends in the provision of pharmaceutical care and pharmaceutical services in European countries. The trends to expand the role of pharmacists in strengthening health care systems in the world are summarized. The services of pharmacies in different European countries and the expansion of the role of pharmacists during the COVID-19 pandemic were analysed.

The work is presented on 57 pages of printed text and consists of an introduction, three sections, conclusions, references, and appendices. The work is illustrated with 12 tables and 4 figures and contains 39 sources of literature.

*Key words:* pharmacy service, pharmacy practice, pharmaceutical care, COVID-19 pandemic.

## АНОТАЦІЯ

Кваліфікаційна робота присвячена вивченню тенденцій у наданні фармацевтичної опіки і фармацевтичних послуг у країнах Європи. Узагальнені тенденції до розширення ролі фармацевтів у посилення систем охорони здоров'я у світі. Проаналізовано послуги аптек у різних країнах Європи і розширення ролі фармацевтів під час пандемії COVID-19.

Робота викладена на 57 сторінках друкованого тексту і складається зі вступу, трьох розділів, висновків, списку використаних джерел, додатків. Робота ілюстрована 12 таблицями і 4 рисунками, містить 39 джерел літератури.

*Ключові слова:* фармацевтичні послуги, фармацевтична практика, фармацевтична опіка, пандемія COVID-19.

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## LIST OF ABBREVIATIONS

AT — Austria

BE — Belgium

BG — Bulgaria

COPD — Chronic Obstructive Pulmonary Disease

COPD — Chronic Obstructive Pulmonary Disease

COVID — Corona Virus Disease

CY — Cyprus

CZ — Czech Republic

DE — Germany

DK — Denmark

EE — Estonia

EL — Greece

ES — Spain

FI — Finland

FIP — International Pharmaceutical Federation

FR — France

HIV — Human Immunodeficiency Virus

HR — Croatia

HTA — Health Technology Assessment

HU — Hungary

IE — Ireland

ISBE — Institute for Evidence-Based Health

IT — Italy

LU — Luxembourg

LV — Latvia

MK — North Macedonia

MT — Malta

NL — The Netherlands

NO — Norway

NOAC — Novel Oral Anticoagulants

OTC — Over the Counter

PGEU — Pharmaceutical Group of the European Union

PL — Poland

PPE — Personal Protective Equipment

PPE — Personal Protective Equipment

PT — Portugal

RO — Romania

RS — Serbia

SE — Sweden

SI — Slovenia

SK — Slovakia

TR — Turkey

UK — United Kingdom

WHO — World Health Organization

XK — Kosovo

## INTRODUCTION

Under modern conditions, an urgent problem of the health care system in various countries of the world is to ensure the physical and economic accessibility of the population to drugs with the appropriate efficiency and safety and their rational use.

Additional services provided by pharmacies, as well as the quality of service (level of service) play an important role in solving this problem.

The aim of this work is to study trends in the pharmaceutical care and pharmacy services in Europe.

To achieve this goal, the following tasks are defined:

- to analyze the contribution of pharmacists in improving health and well-being and range of pharmacy services in different countries;
- to describe pharmaceutical care and related pharmacy services in Europe;
- to categorize pharmacy services according to their popularity in different countries;
- to analyze pharmacy services in different countries of Europe;
- to study the expanding role of pharmacists during COVID-19 pandemic;
- to analyze pharmacy intervention on COVID-19 in different countries of Europe.

Objects of research is scientific literature, reports of international organization (World Health Organization, International Pharmaceutical Federation, Pharmaceutical Group of the European Union), data of conferences and seminars in pharmacy services, statistics.

The subject of research is pharmaceutical care and pharmacy services which are provided outside the primary function of pharmacists.

Research methods. The qualification work uses methods of desk marketing research: analysis of documents, statistic, comparative and descriptive method, content-analysis.

The practical significance of the results. The results of the study are of great importance for pharmacy associations who play an important supporting role to pharmacists by developing and updating guidance and emergency plans to assist community pharmacists. We hope our findings may assist in improving the design, implementation, and research on pharmacy services, and in raising relevant policy questions. This could drive value-based health care that make the best use of community pharmacies.

Approbation of research results and publication. The results of the qualification work were presented at the VI scientific and practical Internet-conference “Формування Національної лікарської політики за умов впровадження медичного страхування: питання освіти, теорії та практики” (March 14–15, 2023, Ukraine, Kharkiv) [35].

Structure and volume of qualification work. The work is presented on 57 pages of printed text and consists of an introduction, three sections, conclusions, references, and appendices.

## **PART 1**

### **THE CURRENT STATE OF PHARMACEUTICAL CARE AND PHARMACY SERVICES**

#### **1.1 Analysis of trends in expanding the contribution of pharmacists to strengthening health care systems in the world**

Although the main role of pharmacists is to supply and dispense medicines, they are increasingly providing direct care to patients, both in community pharmacies and as part of integrated health care provider teams. Community pharmacists have been pursuing additional complementary roles over the last 50 years. International Pharmaceutical Federation (FIP) emphasizes the need to expand the role of community pharmacists to support healthcare systems [35].

Pharmacy services, that are beyond the medication supply role, may be classified into categories adapted from the Kaiser pyramid care model:

- dispensing related services to promote access to medicines: night services; emergency or urgent supply of prescription-only medicines without prescription; repeat dispensing of chronic long-term medications; generic substitution; refusal to dispense due to safety reasons; home delivery;

- health promotion and disease prevention services: handling and disposal of expired or unwanted medicines; needle and syringe exchange; pharmacy travel health; pharmacist-delivered vaccination; weight management; smoking cessation; health education;

- screening and referral services: common ailment management schemes; screening individuals at-risk not on medication; pharmacovigilance for medicines under additional monitoring; scheduling visits / exams; delivery of reports, referral to other healthcare providers;

- disease management services: administering injectable medicines (including antibiotics); directly observed treatment/ supervised consumption of medicines, first time dispensing intervention (e.g., new medicines service); instruction on use of therapeutic, self-monitoring device or medical aid, therapeutic adherence support, teleconsultations by pharmacists, chronic disease management;



- individual case management services (dose administration; aid medication review; home or nursing home medication review; medication reconciliation; therapeutic substitution; deprescribing; integrated care pathways / protocols or quality circles in place with primary care; high-cost therapy dispensing and management; galenic formulation [35].

In 2022, the International Pharmaceutical Federation (FIP) published examples of the invaluable contribution of representatives of the pharmaceutical profession to improving the health and well-being of people around the world.

Back in 2015, the UN adopted the 17 Sustainable Development Goals as a universal call to action to end poverty, protect the planet and ensure that by 2030, all people can enjoy peace and prosperity. Goal 3, which is defined as "Good health and well-being", consists of 13 targets. Representatives of the pharmaceutical profession carry out very important measures to achieve these goals. Pharmacists, specialists in the field of pharmaceutical science and education make significant efforts to make humanity healthier (table 1.1).

Table 1.1

**Examples of the contribution of pharmacists to improving the health and well-being of the world population**

<b>Goals in the direction «Good health and well-being»</b>	<b>Examples of the pharmacists' contribution</b>
Target 3.1 «Reduce maternal mortality».	Severe anemia during or post pregnancy doubles the risk of maternal death. In Tanzania, pharmacies help reduce risk by providing iron supplements. These can sometimes be cheaper than free supplements from government clinics when costs of transport and time spent at a clinic are considered [32, 33].
Target 3.2 «End all preventable death under 5 years of age»	In South Africa, pharmacists administer childhood vaccinations, such as for polio and measles, under an expanded program on immunization [7].
Target 3.3 «Fight communicable diseases».	Pharmacists are preventing HIV infections in Brazil by prescribing antiretrovirals for pre- and post-exposure prophylaxis [2]. As recognized partners in India's tuberculosis control program, pharmacists provide screening, referral, and directly observed treatment (DOT); improving patients' health and helping to stop the spread of TB. And thanks to pharmaceutical scientists, we now have a vaccine for malaria and more than a million children in Ghana, Kenya and Malawi have received a dose [30].
Target 3.4 «Reduce	Community pharmacies in Switzerland give access to stool tests,

<b>Goals in the direction «Good health and well-being»</b>	<b>Examples of the pharmacists' contribution</b>
mortality from non-communicable diseases and promote mental health».	advise on results, and refer to a physician when needed. One six-week campaign in 600+ pharmacies detected 58 cases of colon cancer and 368 cases of advanced adenoma [12]. In Lebanon, pharmacies care for diabetes patients through medicines management, but they also run diabetes awareness campaigns, distributing information, measuring blood glucose and making referrals where needed [1]. Through a specialized service in Canada pharmacists not only help mental health patients with medicines, but also support their communication with other healthcare providers and navigation of the mental health system [28].
Target 3.5 «Prevent and treat substance abuse»	In Kyrgyzstan, community pharmacies supply naloxone in order to prevent deaths from opioid overdose [15].
Target 3.6 «Reduce road injuries and deaths».	Some medicines more than double the risk of traffic accidents. Around the world, pharmacists educate patients on risks of driving impairment. “Talk to your pharmacist” is the advice from New Zealand’s transport agency [20].
Target 3.7 «Universal access to sexual and reproductive care. Family planning and education»	Pharmacists widen access to reproductive health services, including counselling and education. In the USA, some pharmacists are prescribing hormonal (including emergency) contraception [9].
Target 3.8 «Achieve universal health coverage».	Portugal’s government made use of the country’s pharmacy network to bring COVID infections under control; 12.1 million tests were performed in pharmacies between November 2020 and April.
Target 3.9 «Reduce illnesses and deaths from hazardous chemicals and pollution»	In Sweden 90% of patients are prescribed a dry powder inhaler instead of a metered dose inhaler, reducing greenhouse gases emissions [16].
Target 3.A «Implement the WHO framework convention on tobacco control»	Pharmacists in Thailand provide smoking cessation services. One study showed that 29% of patients receiving this service reported abstinence at 30 days [17].
Target 3.B «Support research, development and universal access to affordable vaccines and medicines»	Pharmacy has supported the regulatory approval of single-tablet combination products for nucleoside reverse transcriptase inhibitors and protease inhibitor backbone regimens to improve patient adherence — a breakthrough in HIV therapy.
Target 3.C «Increase health financing and support health workforce in developing countries»	Pharmacy educators add capacity to the health workforce through 2,100+ pharmacy schools. The FIP UNESCO UNITWIN program has enabled powerful development of undergraduate training and continuing pharmacy and pharmaceutical sciences education in sub-Saharan Africa [9].
Target 3.D «Improve early warning systems for global health risks»	FIP is tracking key pharmacy outputs during COVID-19 and, in October 2022, will publish findings on what is needed for pharmacy to be prepared for future pandemics.

Community pharmacy is more overt in portraying the marriage of profession and business than most other professions. Community pharmacy exhibits all the six characteristics of a profession:

- provides high skilled pharmacists based on theoretical knowledge;
- ensures training and learning;
- tests the competence of pharmacists;
- possesses organizational structure;
- requires adherence to a code of conduct;
- and encourages altruistic service.

But community pharmacy is also a trading profession, as it operates to a large extent in the public eye, in the high-street, by purchasing (and pre-financing), stocking, and supplying medicines with highly qualified healthcare professionals [5].

Medication supply is the most important role of community pharmacies as it ensures safe, timely and equitable access to medicines through a trusted and reliable network and high skilled pharmacists subject to regulations, ethics, and standards of practice in all countries around the globe. Moreover, community pharmacists have been pursuing additional complementary roles over the last 50 years. Several policy papers have also acknowledged, in recent years, the need to expand the role of community pharmacists to support healthcare systems. There are multiple reasons for this:

- this may be in response to inadequacies of primary health care services in health systems;
- pressures and budget constraints require a more effective use of health care capacities with a relevant outreach in the community;
- new public health challenges require a better use of health care resources.

The Joint FIP/WHO Guidelines published in 2011 already identified the mission of pharmacy practice as to contribute to health improvement and to help patients with health problems to make the best use of their medicines. These guidelines identify 6 components to this mission:

1. Being readily available to patients with or without an appointment
2. Identifying and managing or triaging health-related problems.
3. Health promotion.
4. Assuring effectiveness of medicines.
5. Preventing harm from medicines.
6. Making responsible use of limited healthcare resources [14].

Mossialos and colleagues published a landmark policy paper in 2015 that reviewed strategies to expand the role of community pharmacists in 6 countries, 3 of them in England, the Netherlands and Scotland, and recommends that future policies should focus on integrating community pharmacists into primary care, developing a shared vision for different levels of services, and devising new incentive mechanisms for improving quality and outcomes [19].

The 2019 Report from the WHO Regional Office for Europe acknowledges that the community pharmacists are the most accessible health professionals to the public and are a cornerstone of primary health care. This report also outlines that the role of community pharmacists is expanding globally. It emphasizes the population should benefit from the full potential of community pharmacies by defining roles and services aligned with healthcare needs of the community, as well as by ensuring effective remuneration for these activities [27].

The 2019 Report from OECD and the European Commission already acknowledges that the role of the community pharmacist has changed over recent years. Although their main role is to dispense medications, pharmacists are increasingly providing direct care to patients, both in community pharmacies and as part of integrated health care provider teams.

More recently, the 2020 Report from the OECD on primary health care recognized that even before the COVID-19 pandemic, health systems in OECD countries faced significant challenges and that in a complex context, primary health care plays a key role for health systems to deliver more and better services. The report identifies pharmacists as primary care providers in its definition of primary health care and outlines there is ample scope for further developing the

role of pharmacists and develop more effective collaboration with general practitioners and other health services.

The report goes further in pointing out process changes that are key to improve care:

- better use of digital technology, and ability to link datasets across primary care and other part of the health systems;
- payment instruments linked to outcomes or desired activities;
- better measurement of the inputs, outputs and outcomes of the primary health care sector;
- patient access and interaction to their health records and accreditation of providers.

The report highlights these messages are as important as ever in the light of the COVID-19 pandemic which has, in many cases, accelerated the implementation of promising innovations in primary health care to achieve a system-wide transformation of care, such as expanding the role of pharmacists. Promoting the continuity of these practices and their wider adoption as health systems move into the pandemic recovery phase is critical for making health systems more resilient to health crisis [25].

The PGEU Position Paper on a vision for Community Pharmacy in Europe for 2030 outlines 10 key recommendations aligned with previous policy papers:

1. Maximize the benefits of the community pharmacist's intervention for patients and healthcare systems by promoting pharmaceutical services to improve treatment outcomes, and adherence and to minimize risks.
2. Involve community pharmacists in collaborative care models.
3. Grant community pharmacists access to all relevant patients' health information and the list of medications they are taking.
4. Consult pharmacists on the integration of new digital solutions in healthcare.
5. Allow pharmacists to help progress the digitalization of healthcare as trusted sources for health information.

6. Support pharmacists in integrating pharmacogenomics, validated clinical rules and real-world data in their daily practice to improve patient safety.
7. Support community pharmacists in offering health screening, medicines management, health promotion and education to help reduce the overall burden of chronic diseases.
8. Establish regulatory frameworks to maximize the value of the highly accessible community pharmacies network to the communities they serve.
9. Ensure that community pharmacists can provide patients with the full range of medicines and medical devices they need.
10. Ensure that remuneration for community pharmacists properly reflects their contribution to improving pharmaceutical care, reducing the burden on other health services, and supporting the sustainability of health systems [22].

## **1.2 Pharmaceutical care and related pharmacy services**

Pharmaceutical care is «the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life» and it «involves the process through which a pharmacist co-operates with a patient and other professional in designing, implementing and monitoring a therapeutic plan that will produce specific therapeutic outcomes for the patient».

Pharmaceutical care directly and comprehensively addresses the medication needs of patients and their quality of life. In doing so, it contributes to the overall efforts of health care professionals in providing patient-centered care and in optimizing medication use [26].

Prescribers and nurses, who, together with pharmacists, are most often involved in responding to a patient's medication needs, will benefit significantly from the introduction of pharmaceutical care. The focus of pharmaceutical care on interprofessional collaboration will also enhance teamwork and reduce medication-related harm, both of which are priorities for health services. Pharmaceutical care should be envisaged as being in addition to the existing roles of pharmacists, such as the management of the supply chain and the provision of medication, including

dispensing and quality assurance. The principal elements of pharmaceutical care are the central role of the pharmacist, the patient-centered care approach, collaboration with carers,<sup>3</sup> prescribers and other health care professionals (integrated care), prevention, detection, and resolution of medication-related problems, and taking responsibility for optimizing medication use to improve a patient's health outcomes and quality of life [26].

The pharmaceutical care process consists of the following activities (fig. 1.1).

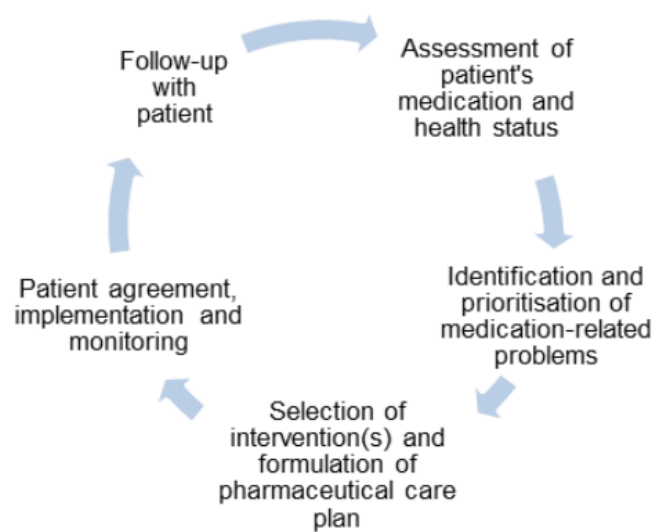


Fig. 1.1 Steps of pharmaceutical care process

1. Patient assessment. The main goal of the assessment is to evaluate the patient's medication-related needs and expectations, and to determine if there are any problems related to the medication therapy. The assessment of the patient should be accurate and comprehensive, and it should be recorded in a way that ensures it can be easily retrieved, updated, and shared, if necessary.

2. A medication review should be performed, that is, a structured evaluation of all the patient's medicines (prescription, non-prescription, supplements and medical devices) to evaluate actual and potential medication-related problems. A medication review is necessary situations and for particular patient groups when the review of a given individual's prescription would not be

sufficiently comprehensive to ensure the patient's health outcomes and optimize medication use.

3. Identification, resolution, and prevention of medication-related problems: a medication-related problem is defined as “an event or circumstance involving drug therapy that actually or potentially interferes with desired health outcomes”. Medication-related problems are associated with, but not limited to, the medication choice, dosage and administration, adverse drug reactions, dispensing errors, prescription errors and compliance and adherence issues.

4. Formulation of a pharmaceutical care plan: the pharmacist should develop a tailor-made pharmaceutical care plan in co-operation with the patient, caregivers, prescribers, and other health care professionals, as appropriate. The goal of the pharmaceutical care plan is to ensure that the medication meets the patient's needs and expectations, and that the medication contributes optimally to the effective management of the patient's condition. Patient counselling, education, and advice: for patients to optimize the use of their medication, it is necessary for them to understand the role played by their medication in the treatment of their condition.

5. Gender and health: both sex and gender have an impact on the health of women and men, on the incidence and prevalence of (specific) diseases and their identification, treatment, management and outcomes. In addition, gender in particular plays a crucial role in determining access to health care, use of the health care system and the behavioral attitudes of both patients and health care professionals. Pharmacists, as health care providers, should be encouraged to give due attention to the gender dimension in their work, by identifying where gender and/or sex-based differences exist and providing gender-sensitive care with a view to promoting equality between women and men.

6. Given that personal details and health information are shared in the above-mentioned steps, pharmacists should ensure that patients' privacy, dignity, and the confidentiality of their data are respected throughout the whole pharmaceutical care process (for example, consultations should take place in



private consultation areas, and personal health information should be handled in compliance with the relevant legal obligations and standards of practice of the profession) [26].

Pharmacies provide a wide range of services to patients and the public. Evidence of the value of pharmaceutical care continues to grow, and systematic literature reviews and meta-analysis evaluating the impact of community (general practice clinics) and hospital pharmacy services in health care have shown their positive effects on patient outcomes and economic benefits [6].

The full range of services provided in pharmacies of different countries of the world includes six groups of services (fig. 1.2).

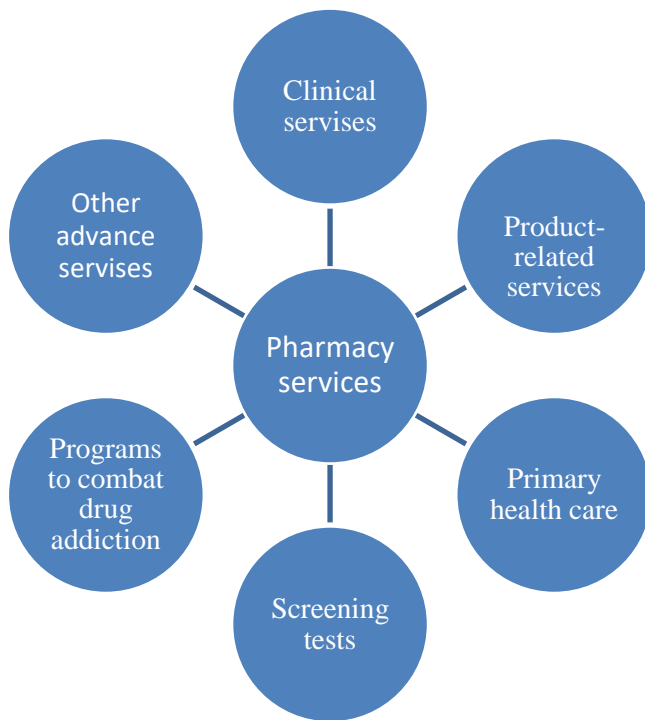


Fig. 1.2 Groups of services provided in pharmacies of different countries

Types of pharmacy services and their description are given in the table 1.2.

Table 1.2

**Types of pharmacy services and their description**

Pharmacy service and synonyms	Description of services
<b>Dispensing related services</b>	
Night service	Night services are on-call or extended opening services that increase the acceptability to community pharmacy
Emergency supply of	Supply of a prescription medication in an

prescription-only medicines without prescription	emergency/lifesaving situation (e.g., adrenaline, salbutamol)
Urgent supply of prescription-only medicines without prescription	Supply of a prescription medication upon request from a patient previously prescribed it, in an urgent situation, without a prescription, to avoid discontinuation of therapy. E. g. patient on holiday; ran out of medicine and cannot obtain a prescription
Repeat dispensing (chronic long-term medications)	System/service whereby repeat issues of prescriptions (e. g. for medications for chronic disease) are managed (held) by the pharmacy and dispensed with required/due to the patient without needing to request a prescription from the physician; the pharmacy holds future issues of the prescription in the pharmacy which are pre-authorized by the prescriber for a set duration (e.g., 3, 6 or 12 months)
Generic substitution	The practice of exchanging at pharmacy level one medicine instead of another with the same active substance, strength and pharmaceutical from another manufacturer
Refusal to dispense due safety reasons	In dispensing a prescription, a pharmacist has to exercise an independent judgement to ensure the medicine is safe and appropriate to the patient; at all times the dispensing of a prescription or any other action taken by the pharmacist, must be consistent with the safety of the patient; pharmacist can refuse to dispense the medicine due to safety reasons
Home delivery	Delivery medicines and healthcare devices at patients' home
<b>Health promotion services</b>	
Handling and disposal of expired or unwanted medicines (Pharmacy waste management)	Disposal of medicine waste includes safe disposal of expired or un-used medicines in pharmacy
Needle/syringe exchange	Service where intravenous drug users can obtain injecting equipment, support, and information. It is usually complemented by support for self-care and referral to another health or social care professional if needed.
Pharmacy travel health (Travel medicine)	Provide pre-travel counselling on individual risk; vaccines administration
Pharmacist-delivered vaccination	Administration of the vaccine by a certified community pharmacist
Weight management/ weight control	The service delivers a patient-centered, integrated weight management service to improve patients' health and quality of life. The service provides physiological support and makes behavioral interventions, as well as interventions to increase physical activity and improve diet. Where appropriate, pharmacological interventions may also be provided
Smoking cessation	Performing counselling and select the most appropriate therapy (e.g., nicotine replacement therapy) to help people give up smoking
Health education	Providing patient counselling on health promotion, lifestyle modification and disease prevention
<b>Screening and referral services</b>	
Common ailment management/Minor ailments	Providing medicines and advice to patients with common health conditions which can be managed without visiting a

service/Common ailments service	physician. It can include the option to prescribe OTC and/or prescription-only medicine by the pharmacist, and referral to another healthcare professional if needed. It may or may not include point-of-care testing (HIV, hepatitis B, hepatitis C, Step A test)
Screening individuals at-risk	Performing a point-of-care test (blood glucose, blood pressure, total cholesterol) or a screening validated questionnaire, or both to identify individuals at risk of chronic disease and not on medication, provide counselling and/or referral to a physician or to another health care professional (e.g., nutritionist). E.g., for diabetes, hypertension, cardiovascular disease, asthma, COOD, colon cancer.
Predictive medicine	Predictive medicine is a branch of medicine that aims to identify patients at genetic risk of developing a disease, thereby enabling either prevention or early treatment of that disease. Either single or more commonly multiple tests are used to identify markers of future predisposition to a disease.
Pharmacovigilance for medicines under additional monitoring	In the European Union, medicines that are being monitored particularly closely by regulatory authorities are labelled with a black inverted triangle in the product information. These medicines are described as being under additional monitoring and usually require a screening prior to dispensing. Additional monitoring aim to enhance reporting of suspected adverse reactions for medicines for which the clinical evidence base is less well developed. The main goals are to screen prior to dispensing and collect information as early as possible to inform the safe and effective use of these medicines and their benefit-risk profile when used in every day medical practice.
Scheduling visits and exams/delivery of reports	Complementary services provided on behalf of patients to schedule visits and exams in pharmacy or primary care and provide patients with health report
Referral to other healthcare providers	Referring patient to other healthcare providers such as nurse or nutritionist
<b>Disease management services</b>	
Administering injectable medicines/ Injection authority	Administration of an injectable medicines (e.g., antibiotics, anti-inflammatory drugs, adrenaline) by a certified community pharmacist
Directly observed treatment (DOT)	A method of drug administration in which the pharmacist observes as a person takes each dose of a medication to ensure the person takes all medications as prescribed and to monitor response to treatment. E.g., methadone, buprenorphine, antibiotics, medicines for treatment of tuberculosis, HIV etc., others
First time dispensing intervention	A structured, private consultation between a pharmacist and a patient starting a new medication focusing on supporting adherence in the first month of treatment. It may or may not include SMS refill / adherence reminder to patients.
Instruction on use of therapeutic of self-monitoring	A structured approach that involves teaching, demonstrating, and assessing the correct use of device. (e.g. stoma

device or medical aid	appliance, inhaler, insulin device, self-monitoring blood glucose)
Therapeutic adherence support	Structured service/program to identify possible issues related to therapy adherence and provide solutions and motivation. It may or may not include SMS refill / adherence reminder to patients.
Teleconsultations by pharmacists	The possibility for pharmacists to consult and provide patients/public with advice by phone or online.
Chronic disease management (e.g., hypertension, diabetes, asthma, COPD, NOAC)	A multi-component pharmacy intervention aiming to control symptoms and slow or stop chronic disease progression. This can include the detection of early signs or changing in a patient's condition, medication monitoring, medication review, adherence support and disease self-care support. It may or may not include SMS refill / adherence reminder to patients. It may or may not include point-of care measurement (e.g., blood glucose, blood pressure, total cholesterol)
<b>Individual case management services</b>	
Dose administration aid (DAA) / Pillbox / Blister pack /Preparation of personalized dosage system	A personalized dosage system or DAA is a device or packaging system for organizing doses of medicines according to the day of the week and time of the day that they need to be taken
Medication review	A structured evaluation of patient's medicines with the aim of optimizing medicines use and improving health outcomes.
Home or nursing home medication review	Medicines review performed at patient's homes or in nursing homes by a community pharmacist.
Medication reconciliation	The process of comparing medications the patient is taking (and should be taking) with newly ordered medications to resolve discrepancies or potential problems. E. g. after hospital discharge.
Therapeutic substitution	The practice of exchanging at a pharmacy level one medicine instead of another with a different active substance and with the same therapeutic intend, in consultation with the prescriber and patient or in accordance with the national/local protocols
Deprescribing	Identifying, reducing and withdrawing medication when the risk of the drug outweighs its clinical benefits (e.g., benzodiazepines, antidepressants, potentially inappropriate medicines in elderly)
Integrated care pathways Protocols and quality circles in place with primary care	Agreed structures pathways of care and interprofessional local meetings between pharmacists, general practitioners (and sometimes primary care nurses) to identify and resolve potential medication and healthcare issues.
High-cost therapy dispensing and management. Dispensing specialty medicines	Dispensing expensive high value medicines (e.g., biological or biosimilar medicines) to patient in the community pharmacy (e.g., oncology, HIV, rheumatoid arthritis, multiple sclerosis)
Drug-hose titration	Process of adjusting the dose of medication by pharmacist, usually with narrow therapeutic index, for the maximum benefit of patient, without adverse effects by increasing or decreasing slowly (e.g., insulin, anticoagulants) under agreed

	protocol or patient direction from physician.
Galenic formulation	Extemporaneous compounding medicines prepared at the pharmacy for an individual patient.
<b>Service based on health technology assessment</b>	
Data collection on new medicines under conditional reimbursement	Collecting and recording patient-level effectiveness metrics of new (recently launched) and innovative medicines during dispensing (usually there are medicines under confidential contracts between Payer and market Authorization Holder with grants temporary reimbursement provided the company can demonstrate effectiveness in the real-world population within the first year(s) of launch under health technology assessment procedures).

Ensuring the effective, efficient, and safe use of medication is a core need of health services in all care settings. However, the adoption of new working practices requires adequate promotion and support. Therefore, pharmaceutical care should be promoted among all prescribers and stakeholders who are directly or indirectly involved in the process of medication use (such as national competent authorities, insurance funds, health care professional associations, academic institutions, prescribers, pharmacists, nurses, and patients).

### **Summary**

1. In different countries, modern pharmacists provide services, that are beyond the medication supply role and may be classified into five categories adapted from the Kaiser pyramid care model: dispensing related services to promote access to medicines, health promotion and disease prevention services; screening and referral services; disease management services; and individual case management services.

2. There is a lot of examples of the pharmacist's contribution to improving the health and well-being of people around the world and reaching the 17 Sustainable Development Goals, adopted by the UN in 2015. Numerous reports of international organizations outline that the role of community pharmacists is expanding globally.

3. The PGEU Position Paper on a vision for Community Pharmacy in Europe for 2030 outlines 10 key recommendations to maximize the benefits of the community pharmacist's intervention for patients and healthcare systems.

4. Pharmaceutical care is the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life. The pharmaceutical care process consists of the following activities: patient assessment; a medication review; identification, resolution, and prevention of medication-related problems; formulation of a pharmaceutical care plan; patient agreement, implementation, and monitoring; follow-up with patient.

5. The full range of services provided in pharmacies of different countries of the world includes six groups of services: clinical services, product-related services, primary healthcare services, screening tests, programs to combat drug addictions, other advanced services. Another classification considers dispensing related services, health promotion services, screening and referral services, disease management services, Individual case management services and service based on health technology assessment.

## **PART 2**

### **ANALYSIS OF CURRENT PHARMACY SERVICES IN EUROPE**

#### **2.1 Grouping of pharmacy services according to their popularity**

We mapped 38 pharmacy services beyond the medication supply core role. These services were organized and hierarchized under the following categories adapted from the Kaiser pyramid care model according to which the population is stratified based on the complexity of their disease condition, for purposes of healthcare management at the community setting using the most effective and least expensive resources:

- dispensing related services to promote access to medicines;
- health promotion and disease prevention services;
- screening and referral services;
- disease management services;
- individual case management services [23].

The top 7 most frequent pharmacy services provided in most pharmacies within the country under contract, agreement, legislation, or regulation were mostly dispensing related. This includes:

- generic substitution (27 countries);
- pharmacovigilance for medicines under additional monitoring (27 countries);
- galenic formulation (24 countries);
- repeat dispensing for chronic long-term medications (22 countries);
- handling and disposal of expired or unwanted medicines (20 countries);
- high-cost therapy dispensing and management such as for oncology, HIV, rheumatoid arthritis, multiple sclerosis (19 countries);
- and night services (19 countries).

Some of these services were reimbursed by the government or health care payer in some (but not all) countries outside the standard pharmacy dispensing remuneration. These include:

- galenic formulation;

- repeat dispensing for chronic medications;
- high-cost therapy dispensing and management;
- night services.

A few countries remunerate generic substitution.

The next tier of the 5 most frequent pharmacy services provided in most pharmacies within the country under contract, agreement, legislation, or regulation were also dispensing related (with one exception of medication review):

- emergency supply of prescription-only medicines without prescription such as adrenalin or salbutamol (12 countries);
- medication review (11 countries);
- urgent supply of prescription only-medicines without prescription (10 countries);
- refusal to dispense due to safety reasons (10 countries);
- and home delivery (10 countries).

Medication review — the only service in this set beyond the dispensing role — is already reimbursed by the government or health care payer outside the standard pharmacy dispensing remuneration in 7 out of 11 countries providing these 26 services in most pharmacies.

Home delivery is also reimbursed in 4 countries with a relevant regulatory upgrade in Germany due to the COVID-19 pandemic.

The third tier of the 8 most frequent pharmacy services provided in most pharmacies within the country under contract, agreement, legislation, or regulation embraces a very different and wide spectrum which goes far beyond the dispensing role. This includes:

- dose administration aid (8 countries);
- instruction on the use of therapeutic or self-monitoring devices (8 countries);
- needle/syringe exchange (8 countries);
- pharmacist-delivered vaccination (7 countries);
- directly observed treatment / supervised consumption of medicines (7 countries);



- first time dispensing intervention (5 countries);
- therapeutic adherence support (5 countries);
- integrated care pathways, protocols or quality circles with primary care (5 countries).

This is a very different set of services, and all are already reimbursed by the government or health care payer outside the standard pharmacy dispensing remuneration although in some (but not all) countries.

The last tier of pharmacy services provided in most pharmacies within the country under contract, agreement, legislation, or regulation includes:

- smoking cessation (4 countries);
- chronic disease management (3 countries);
- therapeutic substitution (3 countries);
- health education (3 countries);
- teleconsultations by pharmacists (3 countries);
- common / minor ailment management schemes (2 countries);
- screening at-risk individuals (2 countries);
- home or nursing home medication review (2 countries);
- medication reconciliation (2 countries);
- scheduling visits / exams, delivery of reports (2 countries);
- weight management (2 countries) [23].

Smoking cessation, chronic disease management, common/minor ailment management, home or nursing home medication review and weight management are reimbursed by the government or health care payer outside the standard pharmacy dispensing remuneration in at least one country.

## **2.2 Analysis of pharmacy services in different countries of Europe**

We have summarized the data regarding current pharmacy services in different countries of Europe. A summary of pharmacy dispensing related services provided in Europe are provided in table 2.1.

Table 2.1

### Dispensing related services provided in Europe

Pharmacy services	Provided in most pharmacies under contract, agreement, regulation	Provided in some pharmacies as a pilot	Remunerated by Government/ Health Payer	Provided individually by some pharmacies	Regulatory limitations
Night service	19 countries: AT; BE; HR; FR; IT; NL; MK; CZ; XK; LU; PT; ES; UK; EL; SK; TR; DE; CY; HU		13 countries: BE; HR; FR; IT; NL; LU; SI; ES; UK; DE; CY; MT; CZ	16 countries: BG; DK; NO; FI; XK; PL; PT; RO; SI; SE; ES; UK; RS; EE; LV; MT	2 countries: PL; SK
Emergency supply of prescription-only medicines without prescription (e.g. adrenaline, salbutamol)	12 countries: AT; DK; FR; IT; NO; IE; XK; PL; RO; UK; CY; MT		1 country: MT	2 countries: BE, PT	4 countries: FI; IE; TR; PT
Urgent supply of prescription-only medicines without prescription (e.g. patient on holiday)	11 countries: AT; DK; IT; NL; IE; XK; PL; RO; UK; CY; PT		1 country: UK	1 country: BE	2 countries: FI; IE
Repeat dispensing (chronic long-term medications)	22 countries: BE; BG; HR; DK; FR; NL; NO; CZ; FI; IE; XK; SI; SE; ES; UK; EL; SK; TR; RS; CY; EE; MT		11 countries: BG; HR; FR; CZ; IE; SI; SE; ES; UK; CY; EE	2 countries: RO; ES	3 countries: DK; IE; SK
Generic substitution	27 countries: BE; DK; FR; IT; NL; MK; NO; CZ; FI; IE; XK; LU; PL; PT; RO; SI; SE; ES; UK; EL; SK; TR; DE; RS; CY; HU; MT		5 countries: FR; IT; IE; SE; EL	2 countries: PT; LV	4 countries: BE; IE; XK; PT
Refusal to dispense due safety reasons	10 countries: BE; DK; FR; IT; NL; NO; SE; UK; DE; MT		4 countries: NL; UK; DE; ML	19 countries: AT; MK; NO; CZ; FI; IE; XK; LU; PL; RO; SI; SE; ES; SK; TR; EE; HU; LV; PT	2 countries: CZ; PT
Other	5 countries: AT; FR; NL; IE; UK		2 countries: NL; IE		

Night services are on-call or extended opening services that increase the acceptability to community pharmacy. In different countries, different approaches to paying for this service are practiced. In Denmark and Poland night service is paid for by patients. In Austria this legally obliged service is not paid for by the public, on-call services cost pharmacies around 35 million Euro. In Belgium, the fixed fee per night (65€) + supplementary fee (5.42€) per reimbursed delivery is used; a patient does not pay a special fee if he has a prescription. The concept of urgency no longer exists. In Bulgaria all pharmacies are free to validate their work time. In Portugal optional fee of 2.50€ per package paid for by patients when the prescription is not prescribed in the same day or the day before; night shift starts after 10pm. In Italy the payment for this service (at patient or NHS charge) has been recently updated. In Norway the pharmacy may charge a fee on the purchase, which is paid for by the customer. In Poland there is a maximum amount charged for night dispensing, pharmacists add this to patient's drug bill. In Slovenia the fee is set flat for each pharmacy and is paid monthly. In Czech Republic the night service was implemented in 2020, fund is divided between these pharmacies (1815€ per month per pharmacy). In Slovakia self-governing region pursuant legislation, in cooperation with the Slovak Chamber of Pharmacists, organizes the provision of emergency pharmaceutical services. The emergency pharmacy service is served from 16:00 to 22:00 during working days and from 8:00 to 22:00 during weekends and non-working days. In Estonia, in some cases of night service are remunerated. In Germany this service is remunerated by the night-time and emergency services fund. In Malta, fee is paid for by patients and Health Insurance Funds [23].

Emergency supply of prescription-only medicines without prescription is a supply of a prescription medication in an emergency/lifesaving situation (e.g. adrenaline, salbutamol). In Norway the pharmacy may charge a fee. In the United Kingdom it is paid for by patients. In Malta, this service is paid for by patients and Health Insurance Funds. In Portugal — no fee-for-service, pharmacy is entitled to the margin fixed by medicines' pricing.

Urgent supply of prescription-only medicines without prescription includes supply of a prescription medication upon request from a patient previously prescribed it, in an urgent situation, without a prescription, to avoid discontinuation of therapy, e. g. patient on holiday; ran out of medicine and cannot obtain a prescription. In Norway, prescriptions are electronic and accessible for all Norwegian pharmacies, so this service not needed.

Repeat dispensing (chronic long-term medications) is a system/service whereby repeat issues of prescriptions (e. g. for medications for chronic disease) are managed (held) by the pharmacy and dispensed with required/due to the patient without needing to request a prescription from the physician; the pharmacy holds future issues of the prescription in the pharmacy which are pre-authorized by the prescriber for a set duration (e.g. 3, 6 or 12 months). In Ireland, it is paid only if covered in a reimbursement scheme. In the United Kingdom it is remunerated by the health service. Spain applies co-payments by patients (product margin). Group personal pensions are voluntary remunerated by patient or Health Service. In the Czech Republic it is remunerated by Health Insurance Companies as service fee. In Germany there is a new legislation in place that basically sets the framework for repeated dispensing. Details on implementation currently under discussion. In Estonia, it is paid for by patients and Health Insurance Fund. In Sweden, it is paid for by patients and Health Service [23].

Generic substitution is the practice of exchanging at pharmacy level one medicine instead of another with the same active substance, strength and pharmaceutical from another manufacturer. In Ireland, it is paid only if covered in a reimbursement scheme. In France, incentives to reach specific public health goals (ROSP — Rémunération sur objectifs de santé publique). In Portugal, as a mechanism to keep increasing generics market share and reduce the financial impact to pharmacies, the government introduced a financial incentive to pharmacies: 0.35€ per pack dispensed (applied to the 4 cheapest medicines in each reference group — same INN, same strength, same pack size). This fee is linked to generated savings; It is up to the Portuguese Medicines Authority to keep an online

updated list of the medicines. In Italy, pharmacy has an incentive to dispense the cheapest drug inside each transparency list. In Sweden, remuneration considered to be part of the dispensing fee. In Greece, if the value of generic medicines exceeds the mean generic substitution performed, a 0.3 % of the exceeding value should be paid to the pharmacy.

Refusal to dispense due safety reasons. In dispensing a prescription, a pharmacist must exercise an independent judgement to ensure the medicine is safe and appropriate to the patient; at all times the dispensing of a prescription or any other action taken by the pharmacist, must be consistent with the safety of the patient; pharmacist can refuse to dispense the medicine due to safety reasons. In turkey, according to the regulation the pharmacists should get in touch with the doctor to clarify the safety reasons (dosage/medicine etc.) [23].

Home delivery is delivery medicines and healthcare devices at patients' home. In Denmark, Finland, Portugal, Sweden, Estonia, and Hungary it is paid for by patients. In Malta it is paid for by patients, health Service and Health Insurance Funds. In Germany during the peak phase of the corona pandemic between Apr and Sept 2020, pharmacists received an expense of 5€ + Value Added Tax (VAT) for each medicine delivery. As of October 1, the remuneration will be reduced to 2.50€ + VAT and is valid until 31 Dec 2020. In Hungary, it is provided voluntarily by pharmacies (5 %).

Information on health promotion pharmacy services is given in table 2.2. Service on pharmacy waste management is provided in most pharmacies under contract, agreement, regulation in 20 countries. Handling and disposal of expired or unwanted medicines includes safe disposal of expired or un-used medicines in pharmacy. In Ireland, some health boards pay for the service, otherwise, pharmacies pay for the collection themselves. In Malts, it is paid for by patients.

Needle/syringe exchange is a service where intravenous drug users can obtain injecting equipment, support and information. It is usually complemented by support for self-care and referral to another health or social care professional if needed. In Portugal, it is remunerated by the National Health Service. After a one-

year evaluation of the program by an independent entity (Faculty of Economics of University of Porto) and also by a consortium ANF CEFAR/Univ.

Table 2.2

### Health promotion services provided in Europe

<b>Pharmacy services</b>	<b>Provided in most pharmacies under contract, agreement, regulation</b>	<b>Provided in some pharmacies as a pilot</b>	<b>Remunerated by government/health payer</b>	<b>Provided individually by some pharmacies</b>	<b>Regulatory limitations</b>
Handling and disposal of expired or unwanted medicines	20 countries: BE; HR; DK; FR; NL; NO; CZ; FI; LU; PT; RO; SE; ES; UK; EL; SK; RS; EE; HU; MT		3 countries: IE; SE; UK	9 countries: AT; IT; IE; XK; PL; PT; TR; DE; LV	1 country: SK
Needle/syringe exchange	8 countries: AT; HR; FR; NL; PT; ES; SK; CY	1 country: IE	4 countries: IE; PT; ES; UK	5 countries: BE; DK; FI; PT; UK	1 country: SK
Pharmacy travel health	1 country: NL			29 countries: AT; BE; BG; HR; DK; FR; IT; NL; MK; NO; CZ; IE; LU; PL; RO; SI; SE; ES; UK; EL; SK; TR; DE; RS; CY; HU; LV; MT; PT	
Pharmacist-delivered vaccination	7 countries: DK; FR; NO; IE; PT; UK; EL	2 countries: LU; DE	5 countries: DK; FR; IE; UK; DE;	3 countries: NO; PT; MT	1 country: FI
Weight management	2 countries: IE; P		1 country: UK	23 countries: AT; BE; BG; HR; IT; MK; FI; LU; PT; RO; SI; SE; ES; UK; EL; SK; TR; DE; RS; EE; HU; LV; MT	
Smoking cessation	4 countries: FR; IE; PT; UK	1 country: NO	2 countries: UK; DK	23 countries: AT; BE; BG; HR; DK; IT; NL; MK; CZ; FI; XK; PT; RO; SI; SE; ES; EL; SK; TR; DE; RS; EE; HU	
Health education		4 countries: HR; FR; IE; PT	1 country: FR	29 countries: AT; BE; BG; DK; IT; NL; MK; NO; CZ; FI; XK; LU; PL; PT; RO; SI; SE; ES; UK; EL; SK; TR; DE; RS; CY; EE; HU; LV; MT	
Other		1 country: IE			

Lisbon CEMBE, Portuguese pharmacies are (since 01/01/2017) remunerated by Portuguese Health Service, in 2.40 € for each kit dispensed. Service on pharmacy travel health provides pre-travel counselling on individual risk, vaccines administration. It is provided in 29 countries individually by some pharmacies.

Pharmacist-delivered vaccination is available in 18 countries. This service includes administration of the vaccine by a certified community pharmacist (e.g., flu vaccine). In Portugal it is paid for by patients. Flu vaccination in pharmacies as vaccination points of public National Health Service (NHS) under an agreement with the Ministry of Health to further integrate them into the public NHS, the Directorate-General for Health convened a group of 39 community pharmacies to collaborate as vaccination points against influenza. The pilot took place in the municipality of Loures, in Lisbon, between 15th Oct and 31st Dec 2018. This pilot aimed at increasing the flu vaccination in people aged  $\geq 65$  years by improving access to the vaccination through pharmacies with no need for a vaccine prescription. The project was financed by the Portuguese national Association of Pharmacies. In Slovakia, the Slovak Chamber of Pharmacists supports the introduction of influenza vaccination in pharmacies. However, pharmacists in Slovakia do not yet have this competence. In Malta and Norway, it is paid for by patients [23].

Service on weight management is available in 26 countries. The service delivers a patient-centered, integrated weight management service to improve patients' health and quality of life. The service provides physiological support and makes behavioral interventions, as well as interventions to increase physical activity and improve diet. Where appropriate, pharmacological interventions may also be provided. In Portugal, it is paid by patients in some cases. In Sweden, this service costs 80 SEK, paid by patients. In the United Kingdom weight control is remunerated by clinical commissioning group.

Pharmacy service on smoking cessation is available in 30 countries. This service includes performing counselling and select the most appropriate therapy (e.g. nicotine replacement therapy) to help people give up smoking. In Denmark it

is paid for by patients or municipality. In Finland, in some cases is paid for by patients. In the Czech Republic it is remunerated by Health Insurance Companies as fee. In Sweden, it is paid for by patients. In the United Kingdom it is commissioned and remunerated locally.

Service on health education is provided in 30 countries. This service includes providing patient counselling on health promotion, lifestyle modification and disease prevention. In France, it is remunerated by the Regional Health Agency.

Information on screening and referral services provided in Europe is given in table 2.3. Service on common ailment management includes providing medicines and advice to patients with common health conditions which can be managed without visiting a physician. It can include the option to prescribe OTC and/or prescription-only medicine by the pharmacist, and referral to another healthcare professional if needed. It may or may not include point-of-care testing (HIV, hepatitis B virus, hepatitis C virus, Step A test). In Sweden, allergy checkup costs for patient 450 SEK; birth mark control 300–350 SEK.

Service on screening individuals at-risk is provided individually by some pharmacies in 26 countries. This service includes performing a point-of-care test (blood glucose, blood pressure, total cholesterol) or a screening validated questionnaire, or both to identify individuals at risk of chronic disease and not on medication, provide counselling and/or referral to a physician or to another health care professional (e.g., nutritionist).

In France, this service is provided by the Regional Health Agency, in case of regional screening campaigns involving pharmacists. In Italy, the colorectal screening service, provided in 18 % of pharmacies, is remunerated by the Health Service. Other screening services such as for diabetes are remunerated by patients. In Sweden, screening for diabetes 125 costs SEK, hypertension — 60–80 SEK (discount for “club members”), spirometry 80 SEK. In the United Kingdom in some cases is paid for by patients [23].



Table 2.3

### Screening and referral services provided in Europe

Pharmacy services	Provided in most pharmacies under contract, agreement, regulation	Provided in some pharmacies as a pilot	Remunerated by Government/Health Payer	Provided individually by some pharmacies
Common Ailment Management Schemes (e.g., Strep-A, UTI / Cystitis)	2 countries: FR; UK	1 country: RS	1 country: UK	5 countries: SE; ES; SK; RS; PT
Screening individuals at-risk not on medication (e.g., for diabetes, hypertension, lipid disorder, HIV, Hepatitis B, Hepatitis C, colon cancer)	2 countries: PT; ES	7 countries: BE; FR; IT; IE; PL; PT; RS	2 countries: FR; IT	26 countries: AT; BG; HR; DK; FR; IT; NL; NO; CZ; IE; XK; LU; PL; PT; SI; SE; ES; UK; EL; SK; TR; DE; EE; HU; LV; MT
Predictive medicine (e.g., genetic risk)		1 country: NL		
Pharmacovigilance for medicines under additional monitoring (e.g., screening questions for black triangle medicines)	27 countries: BE; DK; FR; IT; NL; MK; NO; CZ; FI; IE; XK; LU; PL; PT; RO; SI; ES; UK; EL; SK; TR; DE; RS; EE; HU; LV; MT			1 country: XK
Scheduling visits / exams, delivery of reports	2 countries: ES; IT	2 countries: SK; RS		5 countries: CZ; IE; ES; SK; RS
Referral to other healthcare providers (e.g., nurses and nutritionists)	2 countries: BG; ES			29 countries: AT; BE; HR; DK; FR; IT; NL; MK; NO; CZ; FI; IE; XK; LU; PL; PT; RO; SE; UK; EL; SK; TR; DE; RS; CY; EE; HU; LV; MT
Other: Sale/supply of self-test kits to patients /public	10 countries: FR; IT; NO; FI; LU; PT; SE; ES; TR; MT		2 countries: FR; CZ	10 countries: IT; NL; CZ; FI; PT; SI; SE; SK; EE; HU

Service on predictive medicine is provided in the Netherlands only. Predictive medicine is a branch of medicine that aims to identify patients at genetic risk of developing a disease, thereby enabling either prevention or early treatment of that disease. Either single or more commonly multiple tests are used to identify markers of future predisposition to a disease.

Pharmacovigilance for medicines under additional monitoring. In the European Union, medicines that are being monitored particularly closely by

regulatory authorities are labelled with a black inverted triangle in the product information. These medicines are described as being under additional monitoring and usually require a screening prior to dispensing. Additional monitoring aim to enhance reporting of suspected adverse reactions for medicines for which the clinical evidence base is less well developed. The main goals are to screen prior to dispensing and collect information as early as possible to inform the safe and effective use of these medicines and their benefit-risk profile when used in everyday medical practice.

Scheduling visits and exams/delivery of reports is a complementary service provided on behalf of patients to schedule visits and exams in pharmacy or primary care and provide patients with health report. This service is provided in most pharmacies in France and United Kingdom, provided in some pharmacies as a pilot in Serbia. In Czech Republic in some cases, is paid for by patients.

Service on referral to other healthcare providers is provided individually by some pharmacies in 20 countries. It means referring patient to other healthcare providers such as nurse or nutritionist.

Service on sale/supply of self-test kits to patients or public is provided in 10 countries in most pharmacies. In Norway, sale/supply of self-test kits is paid by the patients. In Finland, in pharmacy point of patient access to health services is remunerated by patient. In Slovakia, Turkey, and Estonia it is paid for by patients. Remuneration is based on the margin. In Malta, sale/supply of self-test kits to patients/public paid for by patients or Health Service; In pharmacy point of patient access to health services: remunerated by Health Service.

Information on disease management services provided in Europe is given in table 2.4.

Administering injectable medicines includes administration of an injectable medicines (e.g., antibiotics, anti-inflammatory drugs, adrenaline) by a certified community pharmacist. In Slovakia, intravenous administration of drugs is performed only in hospitals or outpatient clinics.

Table 2.4

### Disease management services provided in Europe

Pharmacy services	Provided in most pharmacies under contract, agreement, regulation	Provided in some pharmacies as a pilot	Remunerated by Government/ Health Payer	Provided individually by some pharmacies	Regulatory limitations
Administering injectable medicines (e.g., antibiotics)	1 country: PT			1 country: PT	1 country: PT
Directly observed treatment/ Supervised Consumption of Medicines	7 countries: AT; BE; FR; NL; NO; ES; UK		6 countries: AT; BE; FR; NO; IE; UK	7 countries: DK; IE; PL; SE; ES; DE; MT	1 country: IE
First time dispensing intervention (e.g., new medicines service)	5 countries: BE; DK; NL; NO; UK	6 countries: IT; NO; FI; IE; PT; SE	5 countries: BE; NL; UK; DK; NO	4 countries: DK; FI; PT; MT	1 country: BE
Instruction on use of therapeutic, self-monitoring device or medical aid (e.g., stoma appliance, inhaler, insulin device, self-monitoring blood glucose)	9 countries: FR; NL; NO; IE; SI; SE; ES; EL; PT	2 countries: PT; RS	3 countries: FR; NL; NO	25 countries: AT; BE; BG; HR; DK; IT; MK; CZ; FI; XK; LU; PL; PT; RO; ES; UK; SK; TR; DE; RS; CY; EE; HU; LV; MT	
Therapeutic adherence support	5 countries: BE; DK; NL; IE; ES	2 countries: ES; RS	2 countries: DK; P	16 countries: IT; MK; NO; FI; XK; LU; PT; RO; UK; EL; SK; TR; DE; RS; LV; MT	2 countries: BE; SK
Teleconsultations by pharmacists	3 countries: FR; NL; SE	2 countries: IT; IE	1 country: FR	12 countries: BG; DK; IT; NO; CZ; XK; SI; SK; DE; RS; EE; MT	
Chronic disease management (e.g., hypertension, hyperlipidemia, diabetes, asthma, COPD, NOAC)	3 countries: BE; FR; NL	2 countries: LU; RS	3 countries: AT; BE; FR	25 countries: AT; BG; HR; DK; IT; MK; CZ; FI; LU; PT; RO; SI; SE; ES; UK; EL; SK; TR; DE; RS; CY; EE; HU; LV; MT	
Information to patients on conditions / treatments	3 countries: FI; UK; TR		1 country: NO	6 countries: NL; NO; CZ; PL; SK; HU	

Directly observed treatment is a method of drug administration in which the pharmacist observes as a person takes each dose of a medication to ensure the

person takes all medications as prescribed and to monitor response to treatment, e.g., methadone, buprenorphine, antibiotics, medicines for treatment of tuberculosis, HIV etc., others. In Denmark and Malta this service is paid for by patients.

First time dispensing intervention is a service of a structured, private consultation between a pharmacist and a patient starting a new medication focusing on supporting adherence in the first month of treatment. It may or may not include SMS refill / adherence reminder to patients. In United Kingdom it is remunerated by National Health Service. In Denmark it is remunerated according to the agreement with the Ministry of health.

Instruction on use of therapeutic of self-monitoring device or medical aid (e.g., stoma appliance, inhaler, insulin device, self-monitoring blood glucose) is a structured approach that involves teaching, demonstrating, and assessing the correct use of device.

Therapeutic adherence support is a structured service/program to identify possible issues related to therapy adherence and provide solutions and motivation. It may or may not include SMS refill / adherence reminder to patients. In Portugal, preparation of personalized dosage systems paid by Águeda Municipality.

Teleconsultations by pharmacists is the possibility for pharmacists to consult and provide patients/public with advice by phone or online. In Bulgaria, this can be part of standard pharmacy practice but there is no structural framework or regulations around this service.

Chronic disease management (e.g., hypertension, diabetes, asthma, chronic obstructive pulmonary disease (COPD), novel anticoagulant (NOAC) is a multi-component pharmacy intervention aiming to control symptoms and slow or stop chronic disease progression. This can include the detection of early signs or changing in a patient's condition, medication monitoring, medication review, adherence support and disease self-care support. It may or may not include SMS refill/ adherence reminder to patients. It may or may not include point-of care measurement (e.g., blood glucose, blood pressure, total cholesterol). In Austria,

there is remuneration in some cases: management of hypertension could be remunerated partly by health insurance. In Bulgaria this can be part of standard pharmacy practice but there is no structural framework or regulations around this service. In the Czech Republic, Germany, and Malta this service in some cases paid for by patients.

Information on individual case management services provided in Europe is given in table 2.5. Service on dose administration aid (DAA). A personalized dosage system or DAA is a device or packaging system for organizing doses of medicines according to the day of the week and time of the day that they need to be taken. In Austria it is paid for by patients or free service from pharmacy. In Ireland, it is remunerated if patient is accepted by reimbursement scheme. In Poland, in community pharmacy pillboxes are not available. Few hospital pharmacies using the unit-dose system. In Turkey, this service may refer to broken bulk dispensing which can be provided only by hospital pharmacies. In Malta, it is paid for by patients and Care Homes. In Sweden, it is also available as a “private customer service” paid for by patients and Health Service; private consumers pay 99 SEK/month.

Medication review is a structured evaluation of patient’s medicines with the aim of optimizing medicines use and improving health outcomes. In Austria it is remunerated by patients or private health insurance. In Denmark it is paid for by patients or municipality. In the Czech Republic, in some cases, paid for by patients. In Germany, so far only remunerated in pilot. In Slovenia, this service is regulated by the Pharmacy Practice Act and based on doctor’s referral. In Turkey, there is no structural framework or regulations, but it is supported and done by volunteer pharmacists. Home or nursing home medication review is a service when medicines review performed at patient’s homes or in nursing homes by community pharmacists. In Finland, fee based on contracts with care units. In Portugal, it is paid for by patients.

Table 2.5

### Individual case management services provided in Europe

Pharmacy services	Provided in most pharmacies under contract, agreement, regulation	Provided in some pharmacies as a pilot	Remunerated by Government/ Health Payer	Provided individually by some pharmacies	Regulatory limitations
Dose administration aid	8 countries: BE; DK; FR; NL; NO; FI; IE; UK	1 country: HR	5 countries: NL; FI; IE; LU; SE	11 countries: AT; IT; MK; LU; PT; SE; ES; SK; EE; HU; MT	
Medication review	11 countries: DK; FR; IT; NL; NO; CZ; PT; SI; ES; UK; DE	4 countries: NO; LU; DE; RS	7 countries: AT; DK; FR; NL; LU; SI; UK	7 countries: AT; FI; SE; SK; RS; EE; MT	
Home or nursing home medication review	2 countries: DK; NL	1 country: AT	3 countries: DK; NL; FI	7 countries: FR; IT; NO; FI; IE; PT; DE	1 country: CZ
Medication reconciliation	3 countries: NL; IE; PT	1 country: ES	3 countries: BE; FI; SE		
Therapeutic substitution	3 countries: FR; NL; ES		3 countries: FR; TR; CY		
Deprescribing (e.g. benzodiazepines, antidepressants)		2 countries: NL; DE		1 country: IE	
Integrated care pathways / protocols or Quality Circles in place with primary care	4 countries: BE; FR; NL; MT	2 countries: PT; DE	2 countries: BE; FR	3 countries: FR; NO; TR	
High-Cost Therapy Dispensing and Management (e.g. Oncology, HIV, Rheumatoid Arthritis, Multiple Sclerosis)	19 countries: AT; BE; HR; FR; IT; NL; NO; FI; IE; LU; PL; SE; ES; UK; EL; TR; DE; HU; MT	2 countries: HR; PT	14 countries: BE; BG; HR; FR; IT; NL; NO; IE; PL; ES; UK; DE; HU; MT	5 countries: BG; IE; RS; CY; HU	
Drug dose titration (e.g. Insulin)	1 country: NL				
Galenic formulation	24 countries: AT; BE; DK; FR; IT; NL; MK; NO; CZ; FI; XK; LU; PL; PT; RO; SI; SE; ES; EL; SK; TR; DE; LV; MT		20 countries: BE; NL; MK; NO; CZ; FI; XK; LU; PL; PT; RO; SI; SE; ES; EL; SK; TR; DE; LV; MT	4 countries: BG; HR; IE; RS	1 country: SK
Other	3 countries: FR; NL; SI			7 countries: FR; IT; NO; FI; PL; TR; HU	

Medication reconciliation is the process of comparing medications the patient is taking (and should be taking) with newly ordered medications to resolve discrepancies or potential problems, e. g. after hospital discharge. In the Netherlands, admission, and discharge fees for pharmaceutical care at hospital treatment that does not include hospital admission but no remuneration for community pharmacist.

Therapeutic substitution is the practice of exchanging at a pharmacy level one medicine instead of another with a different active substance and with the same therapeutic intend, in consultation with the prescriber and patient or in accordance with the national/local protocols.

Deprescribing is identifying, reducing and withdrawing medication when the risk of the drug outweighs its clinical benefits (e.g., benzodiazepines, antidepressants, potentially inappropriate medicines in elderly).

Integrated care pathways are agreed structures pathways of care and interprofessional local meetings between pharmacists, general practitioners (and sometimes primary care nurses) to identify and resolve potential medication and healthcare issues. In Belgium, a financial incentive is foreseen on the one hand for local CMP meetings (“CMP projects”) and on the other hand for quality promotion programs.

High-cost therapy dispensing, and management includes dispensing expensive and high value medicines (e.g., biological, or biosimilar medicines) to patient in the community pharmacy (e.g., oncology, HIV, rheumatoid arthritis, multiple sclerosis). In Ireland, it is paid for by patients or Health Service if on the High-Tech scheme. In the Czech Republic, this service is provided only in hospital pharmacies. In Slovakia, there is no definition of high-cost therapy. These drugs are routinely dispensed but dispensing and management are not defined. In Hungary, it is paid for by patients and Health Service. In Malta, it is paid for by patients and/or National Health Service in private practice and Government by contract for National Health Service patients. In Germany, there is regular

medicines remuneration scheme. In Sweden it is paid for by patients or Health Service.

Drug dose titration (e.g., insulin) is a process of adjusting the dose of medication by pharmacist, usually with narrow therapeutic index, for the maximum benefit of patient, without adverse effects by increasing or decreasing slowly (e.g., insulin, anticoagulants) under agreed protocol or patient direction from physician.

Galenic formulation are extemporaneous compounding medicines prepared at the pharmacy for an individual patient. In Serbia it is paid for by patients. In Portugal, the price is established by decree-law, and it includes a fee regarding preparation.

Services based on health technology assessment are given in the table 2.6.

Table 2.6

**Services based on health technology assessment provided in Europe**

<b>Pharmacy services</b>	<b>Provided in most pharmacies under contract, agreement, regulation</b>	<b>Provided in some pharmacies as a pilot</b>	<b>Remunerated by government/ health payer</b>	<b>Provided individually by some pharmacies</b>
Data collection on the effectiveness of new medicines				1 country: NL
Other	7 countries: AT; FR; NL; LU; PL; SE; SK	1 country: LU	1 country: FR	7 countries: CZ; PL; PT; UK; TR; EE; HU

The service of data collection on new medicines under conditional reimbursement means collecting and recording patient-level effectiveness metrics of new (recently launched) and innovative medicines during dispensing. Usually there are medicines under confidential contracts between Payer and market Authorization Holder with grants temporary reimbursement provided the company can demonstrate effectiveness in the real-world population within the first year(s) of launch under health technology assessment procedures. In Slovakia the pharmacy is obliged to report side effects to the State Institute for Drug Control.



A map of current practices on 38 pharmacy services in 32 countries in Europe is presented on the fig. 2.1. (fig. 2.1)

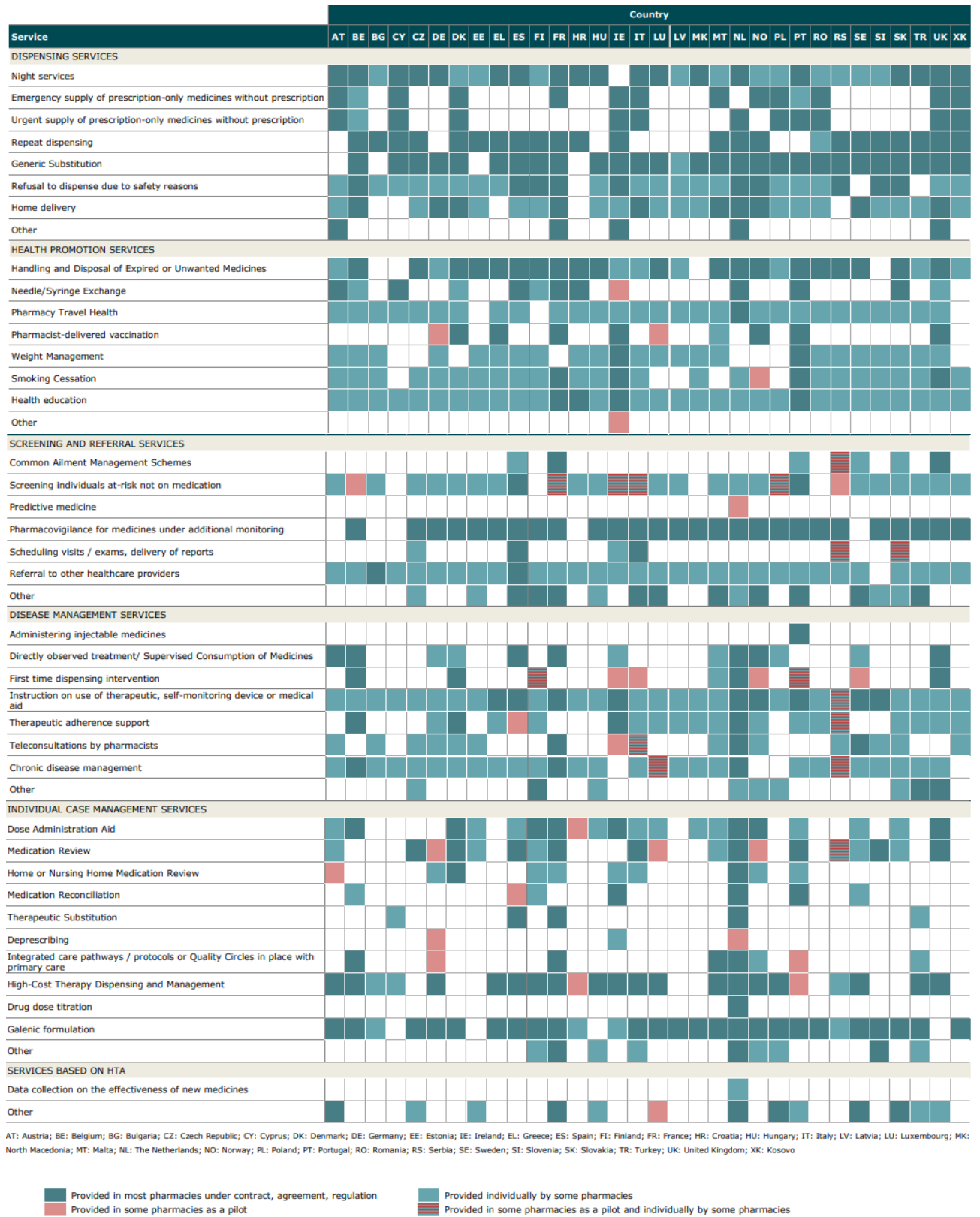


Fig. 2.1 Current pharmacy interventions in Europe — country overview

## **Conclusions to the part 2**

1. We mapped current practices on 38 pharmacy services in 32 countries in Europe. The country mapping portrays numerous and diverse pharmacy services provided in Europe. This is far beyond the dispensing roles and some services are already reimbursed in some countries. This also acknowledges the roles of pharmacies in health promotion, screening, disease, as well as in case management.

2. Such services reflect priorities given to efficiency (generic substitution), safety (pharmacovigilance), pharmacy expertise in preparing individualized or short expiry therapy (galenic formulation), access to medicines during out-of-hours (night services), access to chronic medication (repeat dispensing and high-cost therapy dispensing and management), ensuring safety (emergency supply, urgent supply, refusal to dispense for safety reasons), adherence (dose administration aid, instruction on the use of devices, supervised consumption of medicines, first time dispensing intervention), integrated care pathways with primary care, health promotion activities (pharmacist-delivered vaccination, smoking cessation), chronic disease management, screening and referral (screening individuals at-risk, common and minor ailment management).

3. Positive evidence of pharmacy services stemming from systematic reviews is fairly established for screening and referral (cardiovascular risk, diabetes, asthma and COPD, depression, osteoporosis, cancers). Also, it is well established for chronic disease management (e.g., cardiovascular risk, hypertension, diabetes, lipid, asthma), medication review or medication management, smoking cessation, and therapeutic adherence support.

## **PART 3**

### **ANALYSIS OF PHARMACY INTERVENTIONS ON COVID-19 IN EUROPE**

#### **3.1 Expanding the role of pharmacists during COVID-19 pandemic**

Recently a lot of scientific publications highlights additional roles that can be undertaken by community pharmacists in public health crisis and could help to alleviate pressure on general practice and other health areas [4, 21].

Analysis of scientific literature relieved a wide range of pharmacy measures and interventions on COVID-19 that were put in place within a short time. This includes:

- prevention measures to reduce health risks, such as: patient information and education not only on preventive strategies but also dealing with misinformation and questions on potential COVID-19 treatments; protocols for disinfection of pharmacy premises; use of masks and personal protective equipment; restrictions in opening hours;
- preparedness measures to ensure timely and effective responses, such as: division of staff into teams, when possible; stock and supply of medicines; stock and supply of hand sanitizers and masks; limited quantity dispensed;
- immediate actions as response measures, such as: point-of-care antigen test-based referral pathways for suspected cases; increased demand or changes to repeat dispensing; changes in emergency supply; supply of certain hospital medicines; changes in home delivery; dealing with shortages; preparing alcohol-based hand sanitizer; remote support to vulnerable patients; protocol for reporting on domestic violence, and referral pathways of exposed patients to antibody testing for immunity assessment against COVID-19 [10, 34].

Novel legal authorizations were granted to community pharmacists during COVID-19 pandemic which include the following in 11 European countries: e-prescribing; relaxation of regulations on controlled drugs; right to prepare alcohol-based and hand sanitizers; substitution right when in short supply due to shortages;

dispensing certain hospital medicines; changes to emergency supply; changes to repeat dispensing of chronic medication; home delivery to vulnerable patients [18].

Analysis of scientific literature relieved a reflection on additional new roles for pharmacy relevant in public health crisis. New roles could include managing common ailments at reduced costs for patients; promoting medication adherence, medication review and disease management. These are all ways to alleviate pressure on health services; and to explore the opportunities in drive-thru pharmacy services [10, 34].

Some papers reported difficulties experienced by pharmacies. This included: failure to obtain personal protective equipment from the health services to pharmacy staff; price increases by the wholesalers and suppliers; frequent inspections from authorities; extended working hours; dealing with angry patients; financial loss in the pharmacy; reimbursement delays to pharmacies; and staff mental health [10, 18, 34].

Institute for Evidence Based Health conducted the country survey in 32 countries in Europe on pharmacy interventions on COVID-19 in the Pharmaceutical Group of the European Union member countries.

It was revealed 30 pharmacy interventions on COVID-19; they were organized under categories which correspond to the steps in response to public health emergencies.

1. Prevention: measures to reduce health risks of COVID-19 pandemic.
2. Preparedness: measures to ensure timely and effectively responses from the health care system.
3. Response: immediate actions in response to COVID-19 pandemic.
4. Recovery: measures to return to “normal” activities post-pandemic

The most common pharmacy measures and interventions on COVID-19 in place in all 32 European countries were:

- patient information and education on preventive measures;
- queue management in pharmacies;
- floor marking inside pharmacies;

- and barriers at counters in pharmacies.

The second tier was in place in 26–31 countries. This included:

- protocols for disinfection of surfaces;
- use of masks by staff;
- stock and supply of hand sanitizers;
- stock and supply of protective masks;
- symptom-based referral pathways for suspected cases;
- increased demand / changes to home delivery of medicines;
- and reestablishing patient care services and stock levels.

The third tier was in place in 14–25 countries and included:

- stock and supply of essential medicines;
- dealing with the supply of medicines shortages;
- preparing alcohol-based hand sanitizer formulations;
- and pharmacy telephone support to vulnerable patients during

isolation/ lockdown.

The fourth tier was in place in 6–13 countries:

- 1st and 2nd line pharmacy staff;
- quantity limits dispensed;
- increased demand / changes to repeat dispensing;
- emergency supply of medicines,
- supply of medicines usually supplied in the hospital setting;
- hotline numbers for home delivery of medicines;
- and protocol for pharmacies for reporting on domestic violence during

isolation / lockdown.

The least frequent interventions on COVID-19 (practiced in less than 6 countries) include:

- use of other personal protective equipment by staff;
- restriction in opening hours;
- temporary suspension of patient care services;
- point-of-care antigen test-based referral pathways for suspected cases;

- temporary waived prescription copayments for vulnerable patients;
- drive thru pharmacy services;
- and referral pathways of exposed patients to antibody testing for immunity assessment against COVID-19.

Seventeen interventions had expanded powers granted to pharmacists in 16 countries including:

- increased demand / changes to repeat dispensing;
- dealing with the supply of medicines shortages;
- supply of medicines usually supplied in hospital;
- preparing alcohol-based hand sanitizers;
- protocol for pharmacies for reporting on domestic violence during isolation / lockdown;

- temporary waived prescription copayments for vulnerable patients;
- use of masks by staff;
- stock and supply of essential medicines;
- point-of-care antigen test-based referral pathways for suspected cases;
- emergency supply of medications;
- increased demand / changes to home delivery of medicines;
- pharmacy telephone support to vulnerable patients during isolation / lockdown;

- dealing with new vulnerable patients and referral pathways of exposed patients to antibody testing.

Twenty countries passed legislation in view of COVID-19 for 23 interventions, including:

- stock and supply of hand sanitizers;
- preparing alcohol hand sanitizers;
- increased demand / changes to repeat dispensing;
- stock and supply of essential medicines;
- supply of medicines usually supplied in hospital, just to mention the most frequent.

At the time of survey (September 2020) emergency temporary closures of pharmacies had occurred in Germany (30 pharmacies), Spain (20), Sweden (10–20), Portugal (15), Croatia, Luxembourg, Poland (2) and Belgium (1). Czech Republic, Ireland, Norway, and Greece also reported temporary closures of pharmacies. These figures may have increased or changed. Deaths of pharmacy staff due to COVID-19 were reported to have occurred in Spain (19), Turkey (15), Italy (16), UK (3) and North Macedonia (1). However, not all countries were able to report on this. These figures may have increased.

### **3.2 Analysis of pharmacy intervention on COVID-19 in different countries of Europe**

We have summarized the data regarding current pharmacy measures and interventions on COVID-19 in different countries of Europe. A summary of pharmacy measures and interventions on COVID-19 in Europe in prevention (measures to reduce health risks of COVID-19 pandemic) are provided in table 3.1.

Table 3.1

#### **Pharmacy interventions on COVID-19 in Europe in the direction of reducing health risks of COVID-19 pandemic**

<b>Name of intervention</b>	<b>Provided in most (≥80%) pharmacies</b>	<b>Expanded powers granted to pharmacists</b>	<b>Remunerated by government / health payer</b>	<b>Extra legislation passed in view of COVID-19</b>
Patient information and education on preventive measures	32 countries: AT; BE; BG; HR; CZ; FI; FR; IE; IT; XK; LU; NL; MK; NO; PL; PT; RO; SI; ES; SE; UK; DK; EL; SK; TR; DE; RS; CY; EE; HU; LV; MT	PL		PL; RS
Protocols in place for disinfection of pharmacy surfaces	31 countries: AT; BE; BG; HR; CZ; FI; FR; IE; IT; XK; LU; NL; MK; NO; PT; RO; SI; ES; SE; UK; DK; EL; SK; TR; DE; RS; CY; EE; HU; LV; MT			RS
Use of	30 countries: AT; BE;	BE; IE	BE; IT; LU;	SI

<b>Name of intervention</b>	<b>Provided in most (≥80%) pharmacies</b>	<b>Expanded powers granted to pharmacists</b>	<b>Remunerated by government / health payer</b>	<b>Extra legislation passed in view of COVID-19</b>
disposable masks by pharmacy staff	BG; HR; CZ; FR; IE; IT; XK; LU; NL; MK; NO; PL; PT; RO; SI; ES; UK; DK; EL; SK; TR; DE; RS; CY; EE; HU; LV; MT		PL; SI	
Use of other Personal Protective Equipment by pharmacy staff	3 countries: IE; PL; EL			
Queue management in pharmacy	32 countries: AT; BE; BG; HR; CZ; FI; FR; IE; IT; XK; LU; NL; MK; NO; PL; PT; RO; SI; ES; SE; UK; DK; EL; SK; TR; DE; RS; CY; EE; HU; LV; MT			RS
Floor marking inside pharmacy	5 countries: BG; HR; EL; TR; RS			
Restriction in pharmacy opening hours	5 countries: BG; HR; EL; TR; RS			XK; RS
Barriers at counters in pharmacies	32 countries: AT; BE; BG; HR; CZ; FI; FR; IE; IT; XK; LU; NL; MK; NO; PL; PT; RO; SI; ES; SE; UK; DK; EL; SK; TR; DE ; RS; CY; EE; HU; LV; MT			RS
Temporary suspension of patient care services	1 country: SE			

A summary of pharmacy measures and interventions on COVID-19 in Europe in prevention (measures to ensure timely and effective responses from the healthcare system) are provided in table 3.2.

A summary of pharmacy measures and interventions on COVID-19 in Europe in response (immediate actions in response to COVID-19 pandemic) are provided in table 3.3.



Table 3.2

**Pharmacy interventions on COVID-19 in Europe in the direction of  
ensuring timely and effective responses from the healthcare system**

Name of intervention	Provided in most (≥80%) pharmacies	Expanded powers granted to pharmacists	Remunerated by government / health payer	Extra legislation passed in view of COVID-19
Business continuity plan — for 1st and 2nd line pharmacy staff	10 countries: CZ; FI; IE; XK; LU; NO; SE; UK; RS; PT			
Stock and supply of essential medicines (as defined in your country)	20 countries: BE; HR; FI; FR; IE; LU; MK; NO; PT; RO; SI; SE; DK; EL; TR; DE; RS; EE; LV; MT	FI; IE	LU; MK; RO; SI; EL; TR; DE; RS; EE; MT	FI; IE; SK
Stock and supply of hand sanitizers	26 countries: BE; CZ; FI; FR; IE; XK; LU; NL; MK; NO; PL; PT; RO; SI; ES; SE; UK ; EL; SK; TR; DE; RS; EE; HU; LV; MT	BE		CZ; NL; PL; EL; SK; TR; DE; RS
Stock and supply of protective masks	28 countries: BE; HR; CZ; FI; FR; IE; IT; XK; LU; NL; MK; NO; PL; PT; RO; SI; ES; SE; UK; EL; SK; TR; DE; RS; EE; HU; LV; MT	BE	BE; FR	FR
Quantity limits for patient for the supply of individual medicines	11 countries: BE; HR; FI; FR; IE; NL; NO; PT; SI; SE; SK			FI; SI; SE

Table 3.3

**Pharmacy interventions on COVID-19 in Europe in the direction of  
immediate actions in response to COVID-19 pandemic**

Name of intervention	Provided in most ( $\geq 80\%$ ) pharmacies	Expanded powers granted to pharmacists	Remunerated by government / health payer	Extra legislation passed in view of COVID-19
Symptom-based referral pathways for suspected cases	31 countries: AT; BE; BG; HR; CZ; FI; FR; IE; IT; XK; LU; NL; MK; NO; PL; PT; RO; ES; SE; UK; DK; EL; SK; TR;			
Point-of-care antigen test-based referral pathways for suspected cases	3 countries: SE; UK; HU	FR; UK		FR
Increased demand / changes to repeat dispensing (=prescription renewal of chronic medications)	7 countries: AT; FR; IE; IT; PT; UK; RS	FR; IE; IT; PT; RS	IT; UK	FR; IE; PT; UK
Emergency supply of medications (without prescription)	7 countries: AT; BE; IE; IT; NO; PL; PT	IE; ES	ES	IE
Supply of those medicines, which are usually supplied in the hospital setting (e.g. oncology, antiretroviral)	7 countries: HR; FR; IE; XK; PT; ES; SE	HR; FR; PT; ES	HR; ES	FR; PT; ES
Increased demand / changes to home delivery of medicines	27 countries: AT; BE; HR; CZ; FI; FR; IE; IT; LU; NL; MK; NO; PT; RO; SI; ES; SE; UK; DK; TR; DE; RS; CY; EE; HU; LV; MT	ES; DE	FI; DK; DE; LV	CZ; LV
Hotline numbers for home delivery of medicines	8 countries: HR; FI; IE; IT; PT; SI; DE; LV			LV
Dealing with the supply of medicines shortages	14 countries: AT; BE; HR; FI; IE; IT; LU; NL; NO; PT; UK; EL; SK; DE	BE; HR; NL; PT; UK	NL; DE	DE
Preparing alcohol-based hand	19 countries: AT; BE; BG; HR; CZ; FR; IT;	BE; CZ; FI; FR	HR; CZ; FI; SI; ES; DK;	NL; EL; SK; TR; DE

sanitizer formulations	XK; LU; NL; PL; SI; ES; DK; EL; SK; TR; DE; CY		TR; DE; CY	
Pharmacy telephone support to vulnerable patients during isolation / lockdown	25 countries: HR; CZ; FI; FR; IT; XK; LU; NL; MK; NO; PL; RO; SI; ES; SE; UK; EL; TR; DE; RS; EE; HU; LV; MT; PT	FI; NL		LU
Hotline numbers / protocol for pharmacies for reporting on domestic violence during isolation / lockdown	6 countries: AT; IT; NL; PT; ES; EL	BE; FR; MT		FR; NL
Temporary waived prescription copayments for vulnerable patients	3 countries: BE; DK; RS	BE; FR; RS		FR
Drive thru pharmacy services (initiated or increased)	1 country: SE			

A summary of pharmacy measures and interventions on COVID-19 in Europe to return to “normal” activities post-pandemic are provided in table 3.4.

Table 3.4

**Pharmacy interventions on COVID-19 in Europe — measures to return to “normal” activities post-pandemic**

Name of intervention	Provided in most (≥80%) pharmacies	Expanded powers granted to pharmacists	Remunerated by government / health payer	Extra legislation passed in view of COVID-19
Reestablishing normal patient care services and stock levels	31 countries: AT; BE; BG; HR; CZ; FI; FR; IT; XK; LU; NL; MK; NO; PL; PT; RO; SI; ES; SE; UK; DK; EL; SK; TR; DE; RS; CY; EE; HU; LV; MT			UK
Dealing with the new vulnerable patients due to pandemic	30 countries: AT; BE; BG; HR; CZ; FI; FR; IT; XK; LU; NL; MK; NO; PL; PT;	UK	UK	

	RO; ES; SE; UK ; DK; EL; SK; TR; DE; RS; CY; EE; HU; LV; MT			
Referral pathways of exposed patients to antibody testing for immunity assessment against COVID-19	3 countries: PL; SE; DK	FR	IT (regional scheme)	FR

The European country reports portray a wide array of pharmacy interventions on COVID-19 implemented in most pharmacies. This was done in several countries within a very short time frame. This reflects the highly reactive and adaptive character of pharmacies in response to the pandemic outbreak.

All 30 mapped pharmacy interventions and measures on COVID-19 have been provided throughout Europe although some more extensively than the others (fig.3.1).

Almost all preventive measures to reduce health risks of COVID-19 (patient information, protocols for disinfection of surfaces, use of disposable masks, floor marking, and barrier at counters) have been the most frequent interventions provided in most pharmacies in almost every country.

Conversely, the use of personal protective equipment by staff, restricted opening hours, and temporary suspension of patient care services were not applied in most countries with a few exceptions. This is coherent with possible difficulties in accessing personal protective equipment, extended operations in response to stockpiling and may reflect, to a certain degree, a shift of some primary care patient care services to pharmacies.

The most frequent reported measures to ensure timely and effective responses from the healthcare system included stock and supply of medicines, as well as hand sanitizers and masks. This reflected the pharmacies preparedness for stockpiling and increased demand for services and products. It is also interesting to note that most frequent immediate actions in response to pandemic include symptom-based referral pathways for suspected cases, increased demand to home

delivery of medicines, pharmacy telephone support to vulnerable patients during isolation and dealing with the new vulnerable patients.

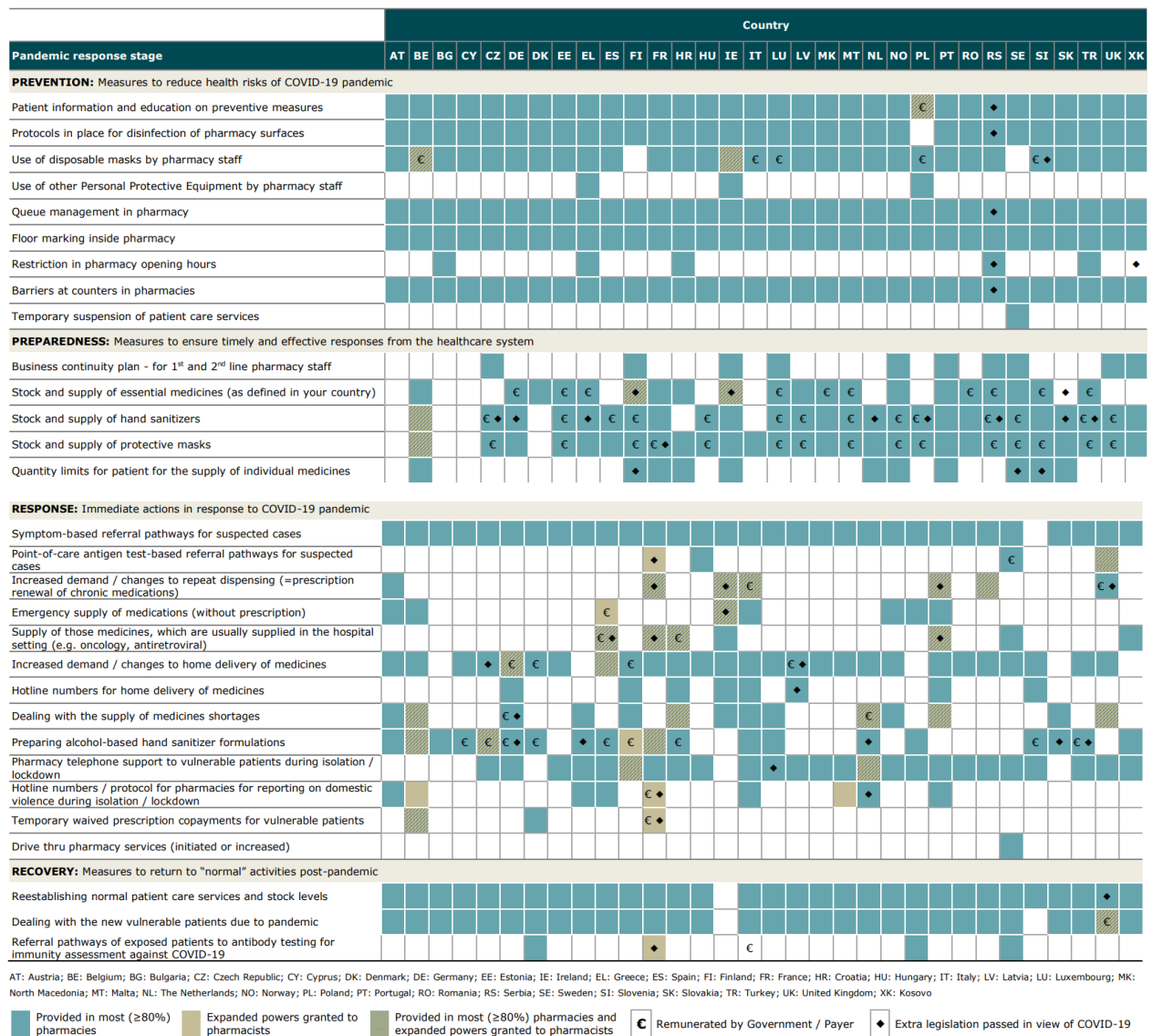


Fig. 3.1 Current pharmacy interventions on COVID-19 in Europe — country overview

These are all important patient care interventions in screening, access, and vulnerable patient support. This exceeds far beyond pharmacist’s traditional dispensing role.

Even more interesting are expanded powers granted to pharmacies and legislation passed in view of COVID-19. This allowed pharmacies to provide certain services reflecting the need to provide improved and faster access to

medication and relevant products, patient screening as well as referral. This also included support to vulnerable patients through an organized, reliable, and safe network.

Emergency temporary closures of pharmacies also occurred in several countries. This impacted on patients' access and patient care and have a negative economic impact. In small towns this also means that this could be a risk of reputation damage, when temporary closures occur.

Research on pharmacy interventions on COVID-19 is still scarce and it is in its infancy stage. However, the literature has confirmed the wide array of interventions provided and expanded powers granted to pharmacies to combat COVID-19.

Pharmacy associations also played an important supporting role to pharmacists by developing and updating guidance and emergency plans to assist community pharmacists.

An editorial paper from April 2020 outlines how countries outside Europe learned from guidance developed by pharmacy associations in Europe. This paper highlighted the role of pharmacists in the COVID-19 pandemic, namely by providing services amidst pandemic, including screening, seeing patients, and reducing the patients' burden on health care facilities such as hospitals and general practitioner practices, providing home deliveries, as well as dealing with the increasing number of patients coming through to pharmacies with the other ailments. Guidelines from pharmacy associations have been adopted and adapted by other countries [3], including by the International Pharmaceutical Federation which created a hub of information for pharmacists worldwide [8].

The World Pharmacy Council also released an important report in September 2020 highlighting the frontline role of community pharmacy during the COVID-19 pandemic, examining the learnings so far, and making recommendations for the future [31].

### **Conclusions to the part 3**

1. We mapped current practices on 30 pharmacy interventions on COVID-19 in 32 countries in Europe. The European country reports portray a wide array of pharmacy interventions on COVID-19 implemented in most pharmacies. This was done in several countries within a very short time frame and reflects the highly reactive and adaptative character of pharmacies in response to the pandemic outbreak.

2. All 30 mapped pharmacy interventions and measures on COVID-19 have been provided throughout Europe although some more extensively than the others. Almost all preventive measures to reduce health risks of COVID-19 (patient information, protocols for disinfection of surfaces, use of disposable masks, floor marking, and barrier at counters) have been provided in most countries.

3. Other frequent interventions reflected the pharmacies preparedness for stockpiling and increased demand for services and products (stock and supply of medicines, hand sanitizers and masks), and important patient care interventions exceeding pharmacist's traditional dispensing role (symptom-based referral pathways for suspected cases, increased demand to home delivery of medicines, pharmacy telephone support to vulnerable patients during isolation and dealing with the new vulnerable patients).

4. Expanded powers granted to pharmacies and legislation passed in view of COVID-19 allowed pharmacies to provide services to improve access to medication and relevant products, patient screening and referral, and support to vulnerable patients. Emergency temporary closures of pharmacies also occurred in several countries. Research on pharmacy interventions on COVID-19 is still in its infancy stage. However, the literature has confirmed the wide array of interventions provided and expanded powers granted to pharmacies to combat COVID-19.

## CONCLUSIONS

1. The modern state of pharmacy practice provides services that are beyond the medication supply role and include dispensing related services to promote access to medicines, health promotion and disease prevention services; screening and referral services; disease management services; and individual case management services.

2. There is a lot of examples of the pharmacist's contribution to improving the health and well-being of people around the world and reaching the 17 Sustainable Development Goals, adopted by the UN in 2015. Reports of international organizations outline the expanding role of community pharmacists.

3. Pharmaceutical care is the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life. The pharmaceutical care process consists of the following activities: patient assessment; a medication review; identification, resolution, and prevention of medication-related problems; formulation of a pharmaceutical care plan; patient agreement, implementation, and monitoring; follow-up with patient.

4. The full range of services provided in pharmacies includes six groups of services: clinical services, product-related services, primary healthcare services, screening tests, programs to combat drug addictions, other advanced services. Another classification considers dispensing related services, health promotion services, screening and referral services, disease management services, individual case management services and service based on health technology assessment.

5. We mapped current practices on 38 pharmacy services in 32 countries in Europe. Such services reflect priorities given to efficiency (generic substitution), safety (pharmacovigilance), pharmacy expertise in preparing individualized or short expiry therapy (galenic formulation), access to medicines during out-of-hours (night services), access to chronic medication (repeat dispensing and high-cost therapy dispensing and management), ensuring safety (emergency supply, urgent supply, refusal to dispense for safety reasons), adherence (dose administration aid,



instruction on the use of devices, supervised consumption of medicines, first time dispensing intervention), integrated care pathways with primary care, health promotion activities (pharmacist-delivered vaccination, smoking cessation), chronic disease management, screening and referral (screening individuals at-risk, common and minor ailment management).

6. We mapped current practices on 30 pharmacy interventions on COVID-19 in 32 countries in Europe. Almost all preventive measures to reduce health risks of COVID-19 (patient information, protocols for disinfection of surfaces, use of disposable masks, floor marking, and barrier at counters) have been provided in most countries.

7. Other frequent interventions reflected the pharmacies preparedness for stockpiling and increased demand for services and products (stock and supply of medicines, hand sanitizers and masks), and important patient care interventions exceeding pharmacist's traditional dispensing role (symptom-based referral pathways for suspected cases, increased demand to home delivery of medicines, pharmacy telephone support to vulnerable patients during isolation and dealing with the new vulnerable patients).

8. Expanded powers granted to pharmacies and legislation passed in view of COVID-19 allowed pharmacies to provide services to improve access to medication and relevant products, patient screening and referral, and support to vulnerable patients. Emergency temporary closures of pharmacies also occurred in several countries.

9. The results of the study are of great importance for pharmacy associations who play an important supporting role to pharmacists by developing and updating guidance and emergency plans to assist community pharmacists.

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# **APPENDICES**







**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ  
НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ  
УНІВЕРСИТЕТ  
КАФЕДРА ОРГАНІЗАЦІЇ ТА ЕКОНОМІКИ  
ФАРМАЦІЇ  
ГО «ХАРКІВСЬКА ОБЛАСНА АСОЦІАЦІЯ  
ФАРМАЦЕВТИЧНИХ ПРАЦІВНИКІВ»**



**ФОРМУВАННЯ НАЦІОНАЛЬНОЇ ЛІКАРСЬКОЇ ПОЛІТИКИ ЗА УМОВ  
ВПРОВАДЖЕННЯ МЕДИЧНОГО СТРАХУВАННЯ: ПИТАННЯ ОСВІТИ,  
ТЕОРІЇ ТА ПРАКТИКИ**

**МАТЕРІАЛИ**

**VI Всеукраїнської науково-освітньої internet конференції**

(м. Харків, 14-15 березня 2023 р.)



**Харків**

**2023**

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ  
НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ  
КАФЕДРА ОРГАНІЗАЦІЇ ТА ЕКОНОМІКИ ФАРМАЦІЇ

**ФОРМУВАННЯ НАЦІОНАЛЬНОЇ ЛІКАРСЬКОЇ  
ПОЛІТИКИ ЗА УМОВ ВПРОВАДЖЕННЯ МЕДИЧНОГО  
СТРАХУВАННЯ: ПИТАННЯ ОСВІТИ, ТЕОРІЇ ТА ПРАКТИКИ**

**МАТЕРІАЛИ**

*VI Всеукраїнської науково-освітньої internet конференції  
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Реєстраційне посвідчення УкрІНТЕІ від 19 грудня 2022 р. №540

**Формування Національної лікарської політики за умов впровадження медичного страхування: питання освіти, теорії та практики:** матер. VI Всеукр. наук.-практ. конф., м. Харків, 14-15 березня 2023 р. / ред. кол.: А.С. Немченко та ін. – Х. : Вид-во НФаУ, 2023. – 384 с.

Збірник містить матеріали VI Всеукраїнської науково-освітньої Internet конференції «Формування Національної лікарської політики за умов впровадження медичного страхування: питання освіти, теорії та практики», в яких розглянуті питання: підходів до формування Національної лікарської політики виходячи з досвіду впровадження системи оцінки технологій в охороні здоров'я (Health Technology Assessment - HTA); тенденцій розвитку фармацевтичного ринку; розробки сучасних механізмів ціноутворення на лікарські засоби; дослідження механізмів компенсації (реімбурсації) вартості ліків та методів їх впровадження у практичну охорону здоров'я та систему фармацевтичного забезпечення населення, а також у медичне страхування; проведення фармакоекономічних досліджень.

Матеріали відредаговані членами редакційної ради у відповідності до вимог, які представлені у Інформаційному листі. Збірник друкується в авторській редакції. Відповідальність за достовірність наданого для видання матеріалу несуть автори одноосібно. Будь-яке відтворення тексту без згоди авторів забороняється.

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університет, 2023

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## **ANALYSIS OF TRENDS IN THE PHARMACEUTICAL CARE AND PHARMACY SERVICES IN DIFFERENT COUNTRIES**

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Although the main role of pharmacists is to supply and dispense medicines, they are increasingly providing direct care to patients, both in community pharmacies and as part of integrated health care provider teams. Community pharmacists have been pursuing additional complementary roles over the last 50 years. International Pharmaceutical Federation emphasizes the need to expand the role of community pharmacists to support healthcare systems.

The purpose of this work is to analyze the contribution of pharmacists in improving health and well-being and range of pharmacy services in different countries. Pharmacy services, that are beyond the medication supply role, may be classified into categories adapted from the Kaiser pyramid care model:

- dispensing related services to promote access to medicines: night services; emergency or urgent supply of prescription-only medicines without prescription; repeat dispensing of chronic long-term medications; generic substitution; refusal to dispense due to safety reasons; home delivery;

- health promotion and disease prevention services: handling and disposal of expired or unwanted medicines; needle and syringe exchange; pharmacy travel health; pharmacist-delivered vaccination; weight management; smoking cessation; health education;

- screening and referral services: common ailment management schemes; screening individuals at-risk not on medication; pharmacovigilance for medicines under additional monitoring; scheduling visits / exams; delivery of reports, referral to other healthcare providers;

- disease management services: administering injectable medicines (including antibiotics); directly observed treatment/ supervised consumption of medicines, first time dispensing intervention (e.g. new medicines service); instruction on use of therapeutic, self-monitoring device or medical aid, therapeutic adherence support, teleconsultations by pharmacists, chronic disease management;

- individual case management services (dose administration; aid medication review; home or nursing home medication review; medication reconciliation; therapeutic substitution; deprescribing; integrated care pathways / protocols or quality circles in place with primary care; high-cost therapy dispensing and management; galenic formulation.

In 2015, 17 Sustainable Development Goals were adopted by the United Nations as a universal call to action to end poverty, protect the planet and ensure that, by 2030, all people enjoy peace and prosperity. Goal 3 «Good health and well-being» includes 13 targets. Target 3.1 was defined as to reduce maternal mortality. Severe anaemia during or post pregnancy doubles the risk of maternal death. In Tanzania, pharmacies help reduce risk by providing iron supplements. These can sometimes be cheaper than free supplements from government clinics when costs of transport and time spent at a clinic are considered. Target 3.2 is to end all preventable death under 5 years of age. In South Africa, pharmacists administer childhood vaccinations, such as for polio and measles, under an expanded programme on immunisation.

Target 3.3 is to fight communicable diseases. In Brazil, pharmacists are preventing HIV infections by prescribing antiretrovirals for pre- and post-exposure prophylaxis. As partners in India's tuberculosis control programme, pharmacists provide screening, referral, and directly observed treatment; improving patients' health and helping to stop the spread of tuberculosis. Target 3.4 is to reduce mortality from non-communicable disease and promote mental health. In Switzerland, community pharmacies give access to stool tests, advise on results, and refer to a physician when needed. One six-week campaign in more than 600

pharmacies detected 58 cases of colon cancer and 368 cases of advanced adenoma. In Lebanon, pharmacists care for diabetes patients through therapy management. They run diabetes awareness campaigns, distributing information, measuring blood glucose and making referrals where needed. In Canada, through a specialised service, pharmacists help mental health patients with medicines as well as support their communication with healthcare providers and navigation of the mental health system.

Target 3.5 is to prevent and treat substance abuse. In Kyrgyzstan, pharmacists supply naloxone to prevent deaths from opioid overdose. Target 3.6 is to reduce road injuries and death. Some medicines more than double the risk of traffic accidents. In different countries, pharmacists educate patients on risks of driving impairment. Target 3.7 is universal access to sexual and reproductive care, family planning and education. Pharmacists widen access to reproductive health services, including counselling and education. In the USA, some pharmacists are prescribing hormonal (including emergency) contraception. Target 3.8 is to achieve universal health coverage. Portugal's government made use of the country's pharmacy network to bring COVID infections under control. 12.1 million COVID tests were performed in pharmacies between November 2020 and April 2022. Target 3.9 is to reduce illnesses and death from hazardous chemicals and pollution. In Sweden, 90 % of patients are prescribed a dry powder inhaler instead of a metered dose inhaler, reducing greenhouse gases emissions.

Target 3.A is to implement the World Health Organisation framework convention on tobacco control. In Thailand, pharmacists provide smoking cessation services. One study showed that 29 % of patients receiving this service reported abstinence at 30 days. Target 3.B is to support research, development and universal access to affordable vaccines and medicines. Pharmacy has supported the regulatory approval of single-tablet combination products for nucleoside reverse transcriptase inhibitors and protease inhibitor backbone regimens to improve patient adherence — a major breakthrough in HIV therapy. Target 3.C is to increase health financing

and support health workforce in developing countries. More than 2,100 pharmacy schools across the globe provide undergraduate training and continuing pharmacy and pharmaceutical sciences education. Target 3.D is to improve early warning systems for global health risks. This target is related to the need for pharmacists to be prepared for future pandemics.

Thus, the role of pharmacists goes far beyond dispensing of medicines. There is every reason to predict the further growth of pharmacists' role in the health care system.

### **АНАЛІЗ КОМПЛЕКСУ ЗАХОДІВ, ЯКІ СПРЯМОВУЄ ВООЗ НА БОРОТЬБУ З ВІЛ-ІНФІКУВАННЯМ НАСЕЛЕННЯ У СВІТІ**

Аїт Хмеїд Мохаммед, Панфілова Г.Л.

Національний фармацевтичний університет, м. Харків, Україна

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Серед проблем міжнародного масштабу ВІЛ-інфікування населення, особливо у країнах з низькими доходами населення займає особливе значення. Протягом декілька десятиліть міжнародна спільнота займається координацією зусиль, що спрямовані на запобігання розповсюдженню ВІЛ у світі.

Мета дослідження – здійснити аналіз комплексу заходів, які спрямовує ВООЗ на боротьбу зі ВІЧ-інфікуванням населення у різних країнах світу.

ВООЗ розпочала боротьбу з ВІЛ у далекому 1987 р., коли вперше була представлена сама назва «Вірус імунодефіциту людини». 1988 р. ВООЗ оголосила про проголошення 1 грудня Всесвітнім днем боротьби зі СНІДом. Вже 1990 р. було опубліковано перше клінічне керівництво з лікування ВІЛ-позитивних людей та хворих на СНІД. Саме цього року особливу увагу національних систем охорони здоров'я (ОЗ) було привернуто до проблеми поширення ВІЛ від матері до дитини та розроблено програму «ВІЛ та жінки». Вже через рік у 1991 р. кількість країн, які приєдналися до вирішення проблем

**ФОРМУВАННЯ НАЦІОНАЛЬНОЇ ЛІКАРСЬКОЇ ПОЛІТИКИ ЗА  
УМОВ ВПРОВАДЖЕННЯ МЕДИЧНОГО СТРАХУВАННЯ:  
ПИТАННЯ ОСВІТИ, ТЕОРІЇ ТА ПРАКТИКИ**

**МАТЕРІАЛИ**

**VI Всеукраїнської науково-освітньої internet конференції  
(м. Харків, 14-15 березня 2023 року)**

Відповідальні за випуск:  
Панфілова Г.Л., Міщенко В.І., Лебедин А.М.

Видавництво Національного фармацевтичного університету  
Україна, 61002, м. Харків, вул. Григорія Сковороди  
Свідоцтво суб'єкта видавничої справи ДК №3420 від 11.03.2009 р.



**National University of Pharmacy**

Faculty for foreign citizens' education  
Department of pharmaceutical management and marketing  
Level of higher education master  
Specialty 226 Pharmacy, industrial pharmacy  
Educational program Pharmacy

**APPROVED**  
**The Head of Department**  
**of Pharmaceutical**  
**Management and**  
**Marketing**

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**Volodymyr MALYI**  
"01" of September 2022

**ASSIGNMENT**  
**FOR QUALIFICATION WORK**  
**OF AN APPLICANT FOR HIGHER EDUCATION**

**Sanaa EL HALFI**

1. Topic of qualification work: «Analysis of trends in the pharmaceutical care and pharmacy services in Europe», supervisor of qualification work: Svitlana ZHADKO, PhD, assoc. prof.

approved by order of NUPh from "6<sup>st</sup>" of February 2022 № 35

2. Deadline for submission of qualification work by the applicant for higher education: April 2023.

3. Outgoing data for qualification work: scientific literature, marketing companies report, reports of international organization (World Health Organization, International Pharmaceutical Federation, Pharmaceutical Group of the European Union), data of conferences and seminars in pharmacy services, statistics.

4. Contents of the settlement and explanatory note (list of questions that need to be developed): to analyze the contribution of pharmacists in improving health and well-being and range of pharmacy services in different countries; to describe pharmaceutical care and related pharmacy services in Europe; to categorize pharmacy services according to their popularity in different countries; to analyze pharmacy services in different countries of Europe; to study the expanding role of pharmacists during COVID-19 pandemic; to analyze pharmacy intervention on COVID-19 in different countries of Europe.

5. List of graphic material (with exact indication of the required drawings):  
Tables – 12, figures – 4

---

6. Consultants of chapters of qualification work

Chapters	Name, SURNAME, position of consultant	Signature, date	
		assignment was issued	assignment was received
1	Svitlana ZHADKO, Associate Professor of Pharmaceutical Management and Marketing Department	15.01.2023	15.01.2023
2	Svitlana ZHADKO, Associate Professor of Pharmaceutical Management and Marketing Department	01.02.2023	01.02.2023
3	Svitlana ZHADKO, Associate Professor of Pharmaceutical Management and Marketing Department	01.03.2023	01.03.2023

7. Date of issue of the assignment: «1» September 2022

**CALENDAR PLAN**

№ 3/II	Name of stages of qualification work	Deadline for the stages of qualification work	Notes
1	Collection and generalization of data from the scientific literature in the areas of qualification work (part 1)	February 2023	<b>Done</b>
2	Analysis of current pharmacy services in Europe (part 2)	March 2023	<b>Done</b>
3	Analysis of pharmacy interventions on COVID-19 in Europe (part 3)	April 2023	<b>Done</b>
4	Writing and design of a qualification work	April 2023	<b>Done</b>
5	Approbation of a qualification work	April 2023	<b>Done</b>
6	Submission of a qualification work to the EC of NUPh	April 2023	<b>Done</b>

**An applicant of higher education**

\_\_\_\_\_ Sanaa EL HALFI

**Supervisor of qualification work**

\_\_\_\_\_ Svitlana ZHADKO

**ВИТЯГ З НАКАЗУ № 35**  
**По Національному фармацевтичному університету**  
**від 06 лютого 2023 року**

нижченаведеним студентам 5-го курсу 2022-2023 навчального року, навчання за освітнім ступенем «магістр», галузь знань 22 охорона здоров'я, спеціальності 226 – фармація, промислова фармація, освітня програма – фармація, денна форма здобуття освіти (термін навчання 4 роки 10 місяців та 3 роки 10 місяців), які навчаються за контрактом, затвердити теми кваліфікаційних робіт:

Прізвище студента	Тема кваліфікаційної роботи	Посада, прізвище та ініціали керівника	Рецензент кваліфікаційної роботи
<b>• по кафедрі фармацевтичного менеджменту та маркетингу</b>			
Ель Халфі Санаа	Аналіз тенденцій фармацевтичної опіки і аптечних послуг в Європі	Analysis of trends in the pharmaceutical care and pharmacy services in Europe доцент Жадько С.В.	професор Назаркіна В.В.

Підстава: подання до ректора

Ректор

Вірно. Секретар



**ВИСНОВОК**

**Комісії з академічної доброчесності про проведену експертизу  
щодо академічного плагіату у кваліфікаційній роботі**

**здобувача вищої освіти**

**№ 113134 від « 9 » травня 2023 р.**

Проаналізувавши випускню кваліфікаційну роботу за магістерським рівнем здобувача вищої освіти денної форми навчання Ель Халфі Санаа, 5 курсу, \_\_\_\_\_ групи, спеціальності 226 Фармація, промислова фармація, на тему: «Аналіз тенденцій фармацевтичної опіки і аптечних послуг в Європі / Analysis of trends in the pharmaceutical care and pharmacy services in Europe», Комісія з академічної доброчесності дійшла висновку, що робота, представлена до Екзаменаційної комісії для захисту, виконана самостійно і не містить елементів академічного плагіату (копіляції).

**Голова комісії,  
професор**



**Інна ВЛАДИМИРОВА**

**1%**

**25%**

**REVIEW**

**of scientific supervisor for the qualification work of the master's level of higher education of the specialty 226 Pharmacy, industrial pharmacy**

**Sanaa EL HALFI**

**on the topic: «Analysis of trends in the pharmaceutical care and pharmacy services in Europe»**

**Relevance of the topic.** Although the main role of pharmacists is to supply and dispense medicines, they are increasingly providing direct care to patients, both in community pharmacies and as part of integrated health care provider teams. Community pharmacists have been pursuing additional complementary roles over the last 50 years. International Pharmaceutical Federation emphasizes the need to expand the role of community pharmacists to support healthcare systems.

**Practical value of conclusions, recommendations and their validity.** The results of the study are of great importance for pharmacy associations who play an important supporting role to pharmacists by developing and updating guidance and emergency plans to assist community pharmacists. This could drive value-based health care that make the best use of community pharmacies.

**Assessment of work.** Sanaa EL HALFI conducted significant research work and successfully coped with it, showed the ability to analyze and summarize the data of literary sources, to work independently. The results of research are properly interpreted and illustrated in tables and figures. In performing the qualification works, the higher education seeker showed creativity, purposefulness, independence, perseverance.

**General conclusion and recommendations on admission to defend.** Qualification work of the 5th year student of higher education of the group Phm18(5.0)eng-04 Sanaa EL HALFI on the topic «Analysis of trends in the pharmaceutical care and pharmacy services in Europe» is a completed research study, which in terms of relevance, scientific novelty, theoretical and practical significance meets the requirements for qualification works, and can be submitted to the EC of NUPh.

Scientific supervisor

\_\_\_\_\_

Svitlana ZHADKO

«13» of April 2023

**REVIEW**

**for qualification work of the master's level of higher education, specialty 226  
Pharmacy, industrial pharmacy**

**Sanaa EL HALFI**

**on the topic: «Analysis of trends in the pharmaceutical care and pharmacy  
services in Europe»**

**Relevance of the topic.** In modern conditions, the urgent problem of the health care system in various countries of the world is to ensure the physical and economic accessibility of the population to medicines with the appropriate effectiveness and safety and their rational use. An important role in solving this problem is played by additional services provided by pharmacies, as well as the quality of service. The aim of this work is to study trends in pharmaceutical care and pharmacy services in Europe.

**Theoretical level of work.** The data of scientific literature on the contribution of pharmacists in improving health and well-being and range of pharmacy services in different countries was analyzed. Pharmaceutical care and related pharmacy services in Europe was described.

**Author's suggestions on the research topic. The author mapped** current practices on 38 pharmacy services in 32 countries in Europe as well as 30 pharmacy interventions on COVID-19 in 32 countries in Europe.

**Practical value of conclusions, recommendations and their validity.** The results of the study are of great importance for pharmacy associations who play an important supporting role to pharmacists by developing and updating guidance and emergency plans to assist community pharmacists.

**Disadvantages of work.** As a remark, it should be noted that some of the results of the literature review, which are presented in the first section, need stylistic refinement. In general, these comments do not reduce the scientific and practical value of qualifying work.

**General conclusion and assessment of the work.** The qualification work of Sanaa EL HALFI on the topic «Analysis of trends in the pharmaceutical care and pharmacy services in Europe» is a science-based analytical study that has theoretical and practical significance. Qualification work meets the requirements for qualification work and can be submitted to the EC of the National University of Pharmacy.

Reviewer \_\_\_\_\_  
«18» of April 2023

prof. Victoria NAZARKINA

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ**  
**НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ**  
**ВИТЯГ З ПРОТОКОЛУ № 11**

21 квітня 2023 року

м. Харків

**засідання кафедри фармацевтичного  
менеджменту та маркетингу**

**Голова:** завідувач кафедри ФММ, доктор фарм. наук, професор Малий В.В.

**Секретар:** доцент ЗВО, канд. фарм. наук, доц. Жадько С.В.

**ПРИСУТНІ:**

зав. кафедри ФММ, доктор фарм. наук, проф. Малий В.В., професор ЗВО, докт. фарм. наук, проф. Слободянюк М.М., професор ЗВО, докт. фарм. наук, проф. Пестун І.В., професор ЗВО, докт. фарм. наук, проф. Ткачова О.В., доцент ЗВО, канд. фарм. наук, доц. Рогуля О.Ю., доцент ЗВО, канд. фарм. наук, доц. Софронова І.В., доцент ЗВО, канд. фарм. наук, доц. Жадько С.В., доцент ЗВО, канд. фарм. наук, доц. Бондарєва І.В., доцент ЗВО, канд. фарм. наук, доц. Малініна Н.Г., доцент ЗВО, канд. фарм. наук, доц. Бабічева Г.С., асистент, канд. фарм. наук Шуванова О.В., асистент, канд. фарм. наук Чегринєць А.А., асистент, канд. фарм. наук Ткаченко І.В., здобувачі вищої освіти випускного курсу спеціальності 226 Фармація, освітньої програми Фармація.

**ПОРЯДОК ДЕННИЙ:** Про допуск здобувачів вищої освіти випускного курсу факультету з підготовки іноземних громадян спеціальності 226 Фармація, промислова фармація, освітньої програми Фармація до захисту кваліфікаційних робіт в Екзаменаційній комісії НФаУ.

**СЛУХАЛИ:** Про допуск здобувачки вищої освіти випускного курсу факультету з підготовки іноземних громадян спеціальності 226 Фармація, промислова фармація, освітньої програми Фармація групи Фм18(5,0д)-04англ Санаа ЕЛЬ ХАЛФІ до захисту кваліфікаційної роботи в Екзаменаційній комісії НФаУ. Кваліфікаційна робота на тему «Аналіз тенденцій фармацевтичної опіки і аптечних послуг в Європі».

**ВИСТУПИЛИ:** В обговоренні кваліфікаційної роботи взяли участь докт. фарм. наук, проф. Пестун І.В., канд. фарм. наук, доц. Бондарєва І.В., Керівник кваліфікаційної роботи: доц. ЗВО, канд. фарм. наук, доц. Жадько С.В.

**УХВАЛИЛИ:** Допустити здобувачку вищої освіти Санаа ЕЛЬ ХАЛФІ до захисту кваліфікаційної роботи на тему «Аналіз тенденцій фармацевтичної опіки і аптечних послуг в Європі в Екзаменаційній комісії НФаУ.

Зав. каф. ФММ, доктор фарм. наук,  
професор

Володимир МАЛІЙ

Секретар,  
доцент ЗВО,  
канд. фарм. наук, доцент

Світлана ЖАДЬКО

**НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ**

**ПОДАННЯ  
ГОЛОВІ ЕКЗАМЕНАЦІЙНОЇ КОМІСІЇ  
ЩОДО ЗАХИСТУ КВАЛІФІКАЦІЙНОЇ РОБОТИ**

Направляється здобувачка вищої освіти Санаа ЕЛЬ ХАЛФІ до захисту кваліфікаційної роботи за галуззю знань 22 Охорона здоров'я спеціальністю 226 Фармація, промислова фармація освітньою програмою Фармація на тему: «Аналіз тенденцій фармацевтичної опіки і аптечних послуг в Європі».

Кваліфікаційна робота і рецензія додаються.

Декан факультету \_\_\_\_\_ / Світлана КАЛАЙЧЕВА /

**Висновок керівника кваліфікаційної роботи**

Здобувачка вищої освіти Санаа ЕЛЬ ХАЛФІ виконала на кафедрі фармацевтичного менеджменту та маркетингу НФаУ кваліфікаційну роботу, яка присвячена аналізу тенденцій фармацевтичної опіки і аптечних послуг в Європі.

У першому розділі роботи узагальнені тенденції до розширення ролі фармацевтів у посилення систем охорони здоров'я у світі. У другому розділі проаналізовані послуги аптек у країнах Європи. У третьому розділі надана оцінка ролі фармацевтів і заходам аптек під час пандемії COVID-19.

У цілому подана до захисту кваліфікаційна робота Санаа ЕЛЬ ХАЛФІ на тему «Аналіз тенденцій фармацевтичної опіки і аптечних послуг в Європі» відповідає вимогам, що висуваються до кваліфікаційних робіт, оцінюється позитивно і може бути рекомендована для захисту в Екзаменаційну комісію НФаУ.

Керівник кваліфікаційної роботи

Світлана ЖАДЬКО

«13» квітня 2023 р.

**Висновок кафедри про кваліфікаційну роботу**

Кваліфікаційну роботу розглянуто. Здобувачка вищої освіти Санаа ЕЛЬ ХАЛФІ допускається до захисту даної кваліфікаційної роботи в Екзаменаційній комісії.

Завідувач кафедри  
фармацевтичного менеджменту  
та маркетингу

Володимир МАЛИЙ

«21» квітня 2023 р.



Qualification work was defended  
of Examination commission on

«\_\_\_» of \_\_\_\_\_ 2023

With the grade \_\_\_\_\_

Head of the State Examination commission,

DPharmSc, Professor

\_\_\_\_\_ / Oleh SHPYCHAK /