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QUALIFICATION WORK

on the topic «**RESEARCH ON THE HARMONIZATION OF NATIONAL
DRUG POLICIES WITH EUROPEAN STANDARDS**»

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ANNOTATION

The qualification work examines the main aspects of the national policy on medicines as a general basis for pharmaceutical provision. The work presents the results of the analysis of the National Policy of Morocco according to WHO indicators.

The work is presented on 45 pages and consists of 3 chapters, general conclusions and a list of used literature from 38 sources. The results of the study are illustrated by 13 figures and 6 tables.

Key words: pharmacist, National Medicines Policy, indicators, essential medicines, national list, healthcare.

АНОТАЦІЯ

У кваліфікаційній роботі досліджуються основні аспекти національної політики щодо лікарських засобів як загальної основи фармацевтичного забезпечення. У роботі представлено результати аналізу Національної політики Марокко за показниками ВООЗ.

Робота представлена на 45 сторінках і складається з 3 розділів, загальних висновків та списку використаної літератури з 38 джерел. Результати дослідження ілюстровані 13 рисунками та 6 таблицями.

Ключові слова: фармацевт, Національна лікарська політика, індикатори, основні лікарські засоби, національний перелік, охорона здоров'я.

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ABBREVIATIONS

AMO – Assurance Maladie Obligatoire

EMA – European Medicines Agency

EU – European Union

EU – European Union

WHO – World Health Organization

NDP – National Drug Policy

FIP – International Pharmaceutical Federation

INN – international nonproprietary names

MENA – Middle East and North Africa

NDP – National Drug Policy

NEMLs – national essential medicines list

WHO – World Health Organization

INTRODUCTION

Actuality of topic. In modern conditions of demand for a significant number of medicines, the problem is especially acute when the life and health of many citizens depend on the ability to obtain the necessary medicines. Under such circumstances, an important role is assigned to the National Drug Policy (NDP), the level of implementation of which affects the provision of medicines to society. The expected results of such a policy depend on the formed choice of goals and objectives developed in compliance with the basic principles of the organization of the national program of Essential Medicines (EM) and further practical activities for their implementation [16].

The standardized goals of its formation are to improve the system of providing the population with effective, safe medicines, their physical, economic availability and rational use [16]. Studying the medicines system from the point of view of implementing processes to achieve the goals of the NDP is important for supporting public health [24]. Analysis of the objectives of the NDP and compliance with WHO indicators will lead to improved equality of access to essential medicines. Only with the right goals and objectives, enshrined in the National Drug Strategy and Supporting Plan, can we expect to achieve the projected intentions in this regard. NDP indicators are useful for assessing the effectiveness of the pharmaceutical system in each country [34].

Existing assessment tools can identify policy gaps, but they do not link them to health system functions and priority areas, which contributes to decision-making. The introduction of a systematic review will help to identify existing indicators evaluating policy in the field of essential medicines. Assess their strengths and weaknesses, as well as understand the parameters needed to develop a new tool for assessing access to medicines. Drug policy evaluation provides transparency, accountability, and can create standards by which comparisons can be made between countries.

The purpose of the qualification work research on the garmonization of

National drug policies with European standards

To achieve the set goal, the following research tasks were defined:

- to analysis of the theoretical foundations of the functioning and regulation of the National Drug Policy.
- to investigate the selection of essential medicines at the country level.
- assess Morocco's national drug policy using WHO indicators.

Research objectives. A comparative analysis of the World Health Organization's 24th Essential Medicines List was conducted with the Moroccan National Medicines List. The study utilized spreadsheets, also available on the websites of the medicine lists under study.

Subject of study. National medical policy from the point of view of WHO indicators and European standards.

Research methods. Historical, graphic, comparative, bibliographic semantic and system analytical.

Practical significance of the work. It consists of analyzing the national medical policy of Morocco using WHO indicators, identifying its strengths and weaknesses, and areas for improvement.

Elements of scientific research. In the qualification work carried out at the Department of Social Pharmacy of the National University of Pharmacy, for the first time, a higher education applicant, together with a scientific supervisor, conducted a study of the effectiveness of the main tasks of medical policy from the perspective of indicators.

Structure and scope of qualification work. The work is presented on 45 pages and consists of 3 chapters, general conclusions and a list of references, which consists of 38 sources. The results of the study are illustrated by 13 figures and 6 tables.

CHAPTER 1

THEORETICAL BASIS OF THE FUNCTIONING AND REGULATION OF NATIONAL DRUG POLICY

1.1 National drug policy as a guarantee of stability and smooth functioning of the pharmaceutical sector

The main goal of the pharmaceutical sector is to provide the population and the healthcare system with high-quality, safe, effective and affordable medicines for the prevention, diagnosis and treatment of diseases. Medicines are a socially important product. Ensuring the constitutional right to health care depends not least on the ability to receive high-quality medical care, including the use of high-quality medicines. In addition, not only the health of citizens, but also the health of the nation and, as a result, the national security of the country depends on the physical availability of medicines and their quality [23].

The current challenges in the global healthcare system are driving the reform of the pharmaceutical sector, with the main goal of creating a single market for medicines, increasing their availability, addressing shortages, and stimulating innovation. Key changes include reducing regulatory burdens, encouraging development to meet unmet needs, and implementing stricter environmental and transparency standards.

To achieve this goal, the sector focuses on the formation of the National Drug Policy (NDP), which is an important regulatory document that meets World Health Organization (WHO) recommendations and considers the national characteristics of the health system and pharmacy [17]. The National Medicines Policy is a guarantee of the stability of the pharmaceutical sector.

NDP determines the strategy for the development of the pharmaceutical health care sector, considering the political and socio-economic priorities of the population's drug supply, the national characteristics of the country's development

and international norms for the regulation of pharmaceutical activities [1,38].

The theoretical foundations of the functioning of the national medical policy are a comprehensive system of principles, legal norms, scientific and methodological approaches and state mechanisms aimed at ensuring the accessibility, quality, safety and rational use of medicines for the population. It is based on WHO standards and the legislation of each country [38].

According to the WHO recommendations, NDP should be presented in the form of an official state declaration containing a formalized list of intentions, goals, decisions and obligations on the part of the state to organize an effective system of pharmaceutical provision of the population under the conditions of the existing resource provision in the national systems of health care and pharmacy [32].

Summarizing the studied material devoted to this topic, it is possible to determine the main goals of national policy in each country (tabl. 1.1) [17,32].

Table 1.1

General goals of national policy in the health care sector

Goals	Coment
Accessibility	Ensuring the availability and affordability of safe and effective, cost-effective medicines that meet the real needs of the healthcare sector, as well as sufficient and reliable information for both healthcare professionals and the population
Ensuring management	Implementation of effective and efficient management of drug supply in the public and private sectors
Rational use	Promoting the rational use of medicines by doctors, pharmacists and patients
Safety, efficiency and quality	Implementation of systematic collection and analysis of data on the need, use, and performance of medicines
State support	Support by the government and authorities at all levels for achieving the goals and objectives of the NDP; consideration of this policy as an integral part of the national health policy

State policy is based on the principles of transparency, effective, but not excessive, regulation, stimulation of fair competition, and monitoring the effectiveness of implemented processes to improve them. The distribution of functions for the formation of state policy in the field of circulation of medicines and its practical implementation, public control over transparency and efficiency, and strengthening the expert and logistical potential of regulatory and expert bodies are the principles of proper development of the pharmaceutical sector. Special attention is paid to issues of professional development of human resources involved in the process of circulation of medicines.

Providing the population with medicines has long been one of the important directions of the national medical policy [38]. This is due to the collective awareness and official recognition of the need to preserve the health of the nation for the benefit of the development of future generations in the future [3,16].

In this area, it is expedient to understand NDP itself as a set of orderly measures sanctioned by the state (fig. 1.1), which are practically implemented by the subjects of power aimed at satisfying the maximum number of needs of society and the state in the field of health care, in various directions, by the relationship of appropriate forms and methods [17,26].

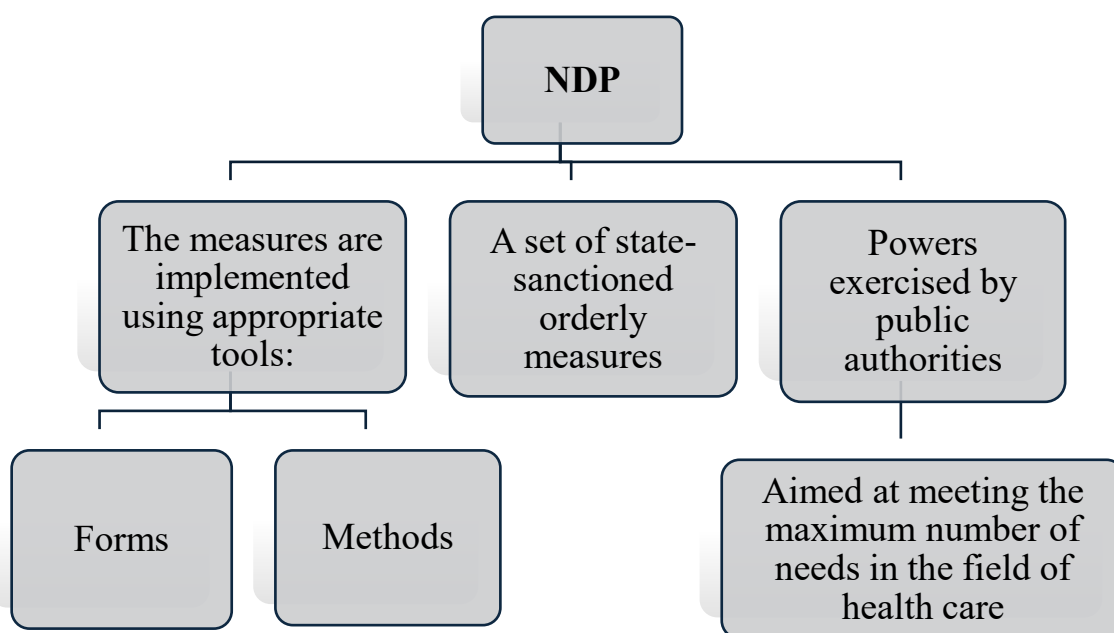


Fig.1.1 Signs of NDP in the field of population security

All this policy has a single direction, which can be presented in several general positions [34,37,38]. The main guidelines of NLP can be presented as:

- improving the system of state guarantees regarding the provision of medicines to the population;
- ensuring physical and economic accessibility to medicines officially included in the National List of Essential Medicines.

The two groups of measures mentioned above involve the implementation of several complex steps. Successful implementation of all these planned measures should lead to the expected overall results on this issue [26,38].

The NDP sets clear rules for manufacturers, distributors and pharmacies. This allows businesses to plan investments for the long term, based on stable legislation that meets international standards (in particular, EU and WHO requirements).

More specific goals and objectives of the NDP depend on the situation in the country, the national policy of its health system, and the political priorities set by the government. The tasks of the healthcare system may be supplemented, for example, economic an additional task may be to increase the production volumes of the national pharmaceutical industry.

WHO publishes recommendations according to which the development of NLP should be public, open, justified and transparent, in accordance with the requirements of the state policy on the circulation of medicines. Therefore, it is mandatory to establish goals, elements and tools, which is the responsibility of each state [14].

The implementation of a national drug policy is a complex process influenced by a number of political, economic, and social factors.

At the first stage of the implementation of the NDP, the epidemiological factor plays an important role. It comes into effect because of the widespread spread of a certain disease. Then, society has the right to demand from state institutions to counter the spread of such a disease, and this indicates the presence of a social basis. In turn, several existing political forces can initiate the adoption of an appropriate decision, thereby satisfying public demand.

The legal factor comes into play. The competent authority makes the necessary decision, making changes to the established legal mechanisms for regulating social relations in the state. Accordingly, new such mechanisms arise and operate [37].

The economic aspect comes into play at the last stage of this process. Such a decision may include a directive to increase the quantity of a drug, by expanding production or launching new such processes [1]. Accordingly, changes in the country's economic system are possible.

1.2 Analysis of the principles of organization and research into the practical aspects of implementing NDP

The exceptional role and effectiveness of the availability of drug therapy is determined by the growing need for medicines both in public health care and by the increase in the consumption of narcotic substances by the population as a whole. Currently, one of the most pressing health care problems is the efficient use of medicines and other resources.

The National Medicines Policy is a critically important component of a national health policy aimed at ensuring the availability of medicines. To shape it, it is necessary to first establish long-term benchmarks, such as rational use and quality assurance, and implementation requires course support, cross-sectoral collaboration, and adherence to practical plans [37].

Its development involves situational analysis, definition of objectives (availability, regulation, use) and planning, while its implementation requires a legal framework, financing, supply management and stakeholder engagement. The fundamental elements of education emphasize the importance of reforming it. The basic factors of development form the foundation for its implementation.

The strategic framework for establishing the NDP should be aimed at creating an effective health system that is based on national needs and supports broader reforms in the sector. The NDP aims to develop institutional capacity for long-term

improvement of the sector [28].

The main components shaping the policy are based on the current legislation, which establishes requirements for the regulation and quality assurance of medicines. Selection of vital medicines, optimization of procurement, equitable distribution and public financing are elements of this program.

This process is based on interaction with individuals or groups who influence the project and on whom ensuring successful implementation and minimizing risks during implementation depend. This includes creating a plan, transparent communication, and considering interests to achieve the project's goals. Policy stakeholders include ministries of health, representatives of the scientific community, key players in the pharmaceutical market, and consumers [12].

Understanding the directions of development and reform of the pharmaceutical industry is possible only through connections with the process of qualitative and structural changes in the country's economy, with the complex of opportunities, resources, structural elements that ensure the functioning and development of the pharmaceutical industry, and cultural factors.

The issue of systematic and effective implementation of NDP in the context of providing the population with medicines is complex, including several related but independent aspects [32]. Such aspects require attention.

The policy development process can be defined as a framework that will be transformed into a National Medicines Strategy and a supporting action plan that includes programs, projects, and activities (figure 1.2) [29,33].

NATIONAL HEALTH POLICY

NATIONAL DRUG STRATEGY

NATIONAL
ACTION PLAN

PROGRAMS

PROJECTS

ACTIVITIES

Fig. 1.2 Conceptual framework of the National Drug Policy

Policies should be strategically flexible and adaptable to accommodate changes over time, allowing for a clear definition of the development process at the outset. This provides an opportunity to collect data before the new policy is launched, allowing the country to learn from its own experiences and improve its pharmaceutical reform performance.

To compare the extent of implementation of different pharmaceutical policies across countries, key components of the NDP can be grouped by structure (fig.1.3).

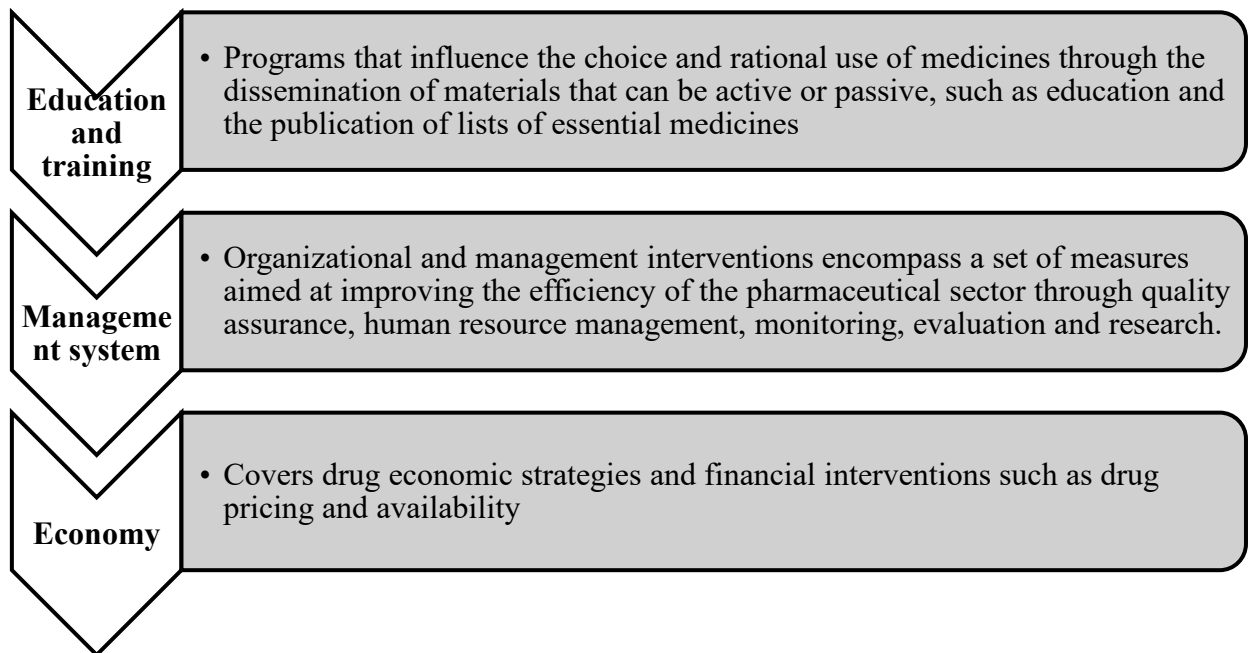


Fig. 1.3 Main directions of national policy intelligence [14, 17]

This model assumes that not only the content of a policy determines how it will be developed and implemented, but also the context in which it takes place and the actors involved in the process.

The World Health Organization recommends that the programme be presented in the form of a published and formal statement that serves as a public expression of the national government's aspirations, goals, decisions and commitments. It is important to ensure that its objectives and responsibilities are clearly defined and understood by all stakeholders [5].

According to WHO, the national programme document was published in 2001; the policy is presented as a systematic process of consultation with all stakeholders, including the necessary set of goals and priorities, as well as objectives

important for successful implementation and further action (fig.1.4) [14,17,32-34].

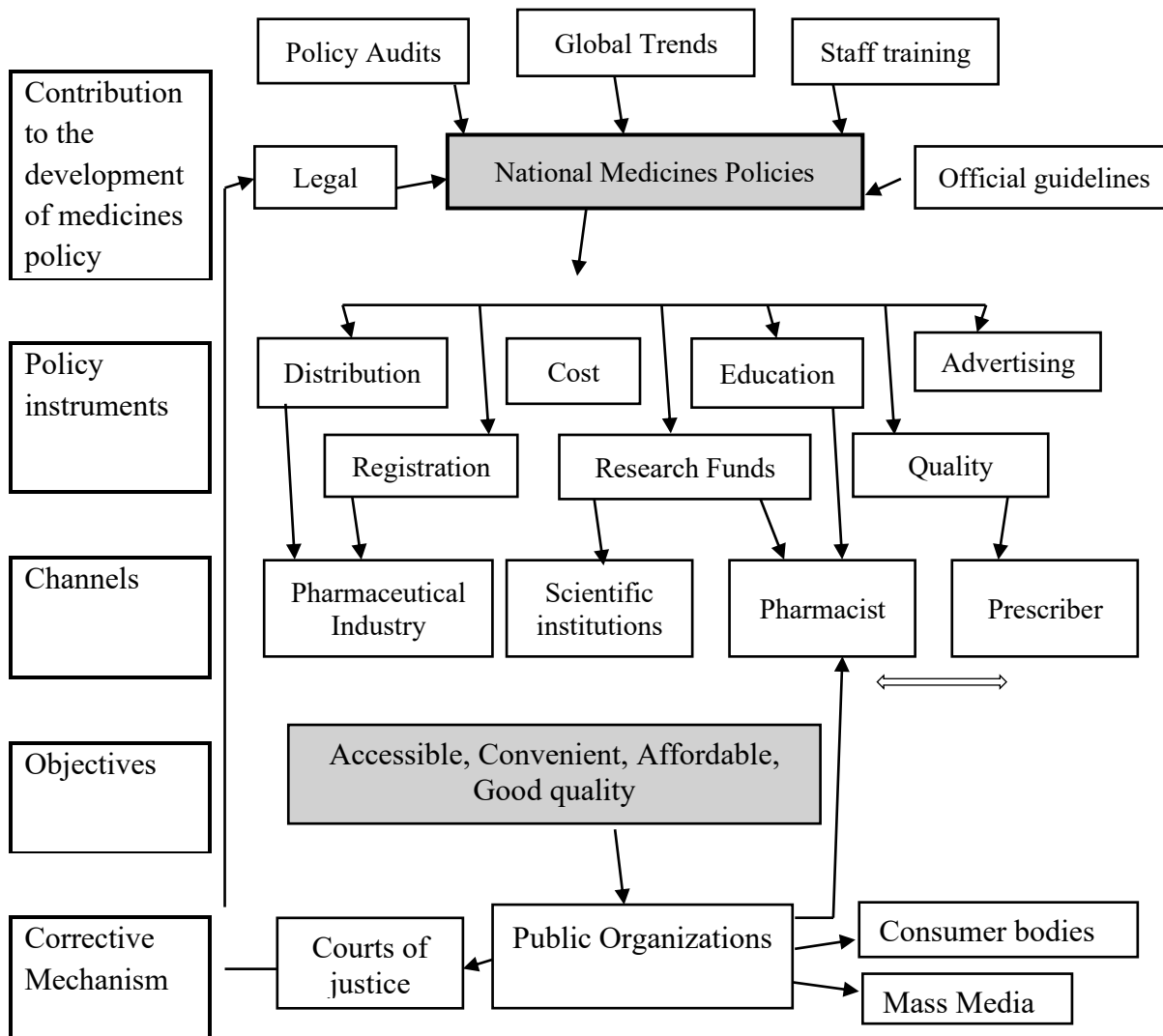


Fig.1.4 Structure of a comprehensive drug policy

Each country has different incentives that drive the development of its own policies. But the opportunity to benefit from the experience of other countries provides an impetus for harmonizing best practices within its region [5,12].

Thus, benchmarking National Policies can allow countries to share principles of good governance with tangible local solutions, allowing them to build trust, ensure data sharing, and establish monitoring indicators.

Based on the understanding of the expediency of the existence of NDP results for providing the population with medicines, we can make an assumption about the existence of unified algorithms for their achievement. We have identified the main stages of the formation of NDP for providing the population with medicines [17].

1. Clarifying the nature and scale of the problems (quantitative and

specific composition of such means to meet the needs of society, checking their quality, effectiveness and safety), as well as assessing the possibilities of solving the latter.

2. Development and approval of goals and objectives, stages of implementation of relevant activities, for the effectiveness of problem solving.
3. Making management decisions to achieve goals and perform tasks.

Conclusions to chapter 1

Based on the analysis of the sources we have studied, we can conclude that NDP has a complex character and includes two basic stages – formation and practical implementation. These stages are interrelated, the achievement of goals for each of them is the key to the functioning of NDP in this area. These are the main conditions under which constant and timely provision of medicines to the population is possible.

The components of the National Drug Policy are highlighted, namely economic, informational, organizational and managerial, social, educational and regulation, their interrelationship is shown, and the content and general measures are disclosed.

In general, the national drug policy should ensure the legality and stability of the pharmaceutical industry. NDP should be understood as a set of state-sanctioned, regulated measures that are practically implemented by subjects of government authority, aimed at meeting the maximum number of needs of society and the state in the field of health care, in various areas, using appropriate forms and methods.

NDP to provide the population with medicines is a comprehensive measure and contains stages - its formation and direct practical implementation. These stages are interrelated and the achievement of goals in each of them is the key to the functioning of NDP in this area. Only such conditions make it possible to constantly and timely provide the population with all drugs included in the National List.

CHAPTER 2

RESEARCH ON THE CHOICE OF ESSENTIAL DRUGS AT THE COUNTRY LEVEL

2.1 Organization of pharmaceutical policy in European countries in modern conditions

The list of objectives of each country's national drug policy is generally similar, although not completely identical. Currently, national drug policies have been developed in more than 150 countries. [11,17]. These include all countries of the European Union (EU) and the United Kingdom.

Europe plays a key role in the global market due to its developed healthcare infrastructure and growing number of chronic diseases. The region also benefits from a well-developed legal framework and widespread implementation of unique pharmaceutical technologies.

The conflict between public health priorities and industry objectives remains the most acute in the development of pharmaceutical policy in the European Union. Responsibility to the consumer always comes first when implementing NDP[1]. This priority ensures that only safe, high-quality and effective medicines enter the market. The next topic is the preparation of a balanced health budget, which takes into account the control of treatment costs and the provision of medicines to the population. And the last issue in many countries that is favorable to the industry is the introduction of regulation [2].

In addition, the pharmaceutical market is characterized by a demand structure:

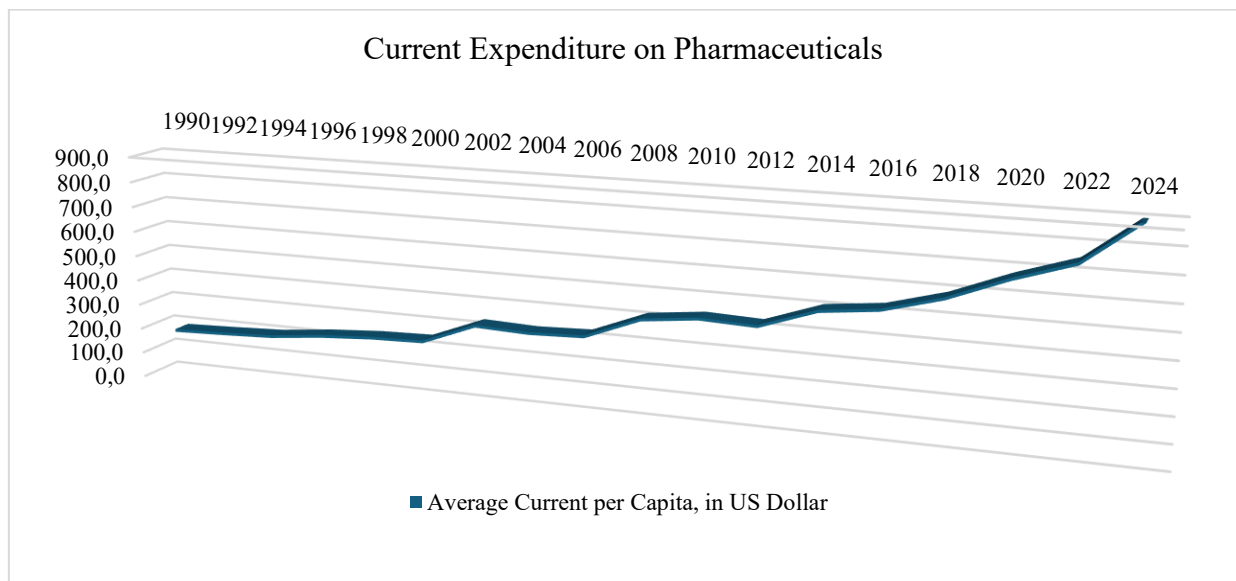
- medicines are prescribed by doctors,
- and the bulk of the costs are often borne by patients,
- usually through some type of health insurance.

However, competition is not always present: sometimes one or two leading companies can dominate the market for a particular class of drugs, making even

greater government intervention necessary.

Most publicly available international data on pharmaceutical spending relate to prescription and non-prescription pharmacy sales. In most countries, spending on pharmaceuticals as a percentage of GDP has remained fairly stable since the 1990s.

However, in total, they began to grow rapidly from the beginning of the 1990s. Over the past decades, the average retail spending on pharmaceuticals per capita (prescription and non-prescription drugs) in EU countries has increased from USD 243 in 2000 to USD 954 in 2024 (fig. 2.1) [6].



Source: Statista

Figure 2.1. Current spending on pharmaceuticals and other medical goods

The increase in pharmaceutical spending is accompanied by increased attention to policies to contain these costs. The significant differences in pharmaceutical policies and drug costs across countries suggest that significant efficiency gains can be achieved. Many countries have implemented various policy measures aimed at promoting more economical use of pharmaceuticals and ensuring optimal value for money.

The EU seeks to deregulate national markets and give national governments the right to make healthcare decisions. In EU policy, there is a conflict between the principles of the single market and the principle of complementarity, which requires considering national characteristics, which creates legal tension in the regulation of

the circulation of medicinal products [2].

Each European country formulates its own policy on medicines, but through the coordination of networks of national authorities and under the guidance of the European Medicines Agency (EMA). They combine EU-harmonized safety and efficacy rules with national individual pricing and reimbursement decisions, ensuring patients have access to affordable medicines [31].

The national policy on medicines in European countries is based on basic principles common to all countries. It is based on strict production controls (GMP), registration under a centralized and national procedure, and includes effective pharmaceutical care to monitor the use of medicines.

It is possible to determine the main components of medical policy in the EU (tabl. 2.1.) [33,34].

Table 2.1

Fundamental units of EU pharmaceutical policy

Component	Coment
1	2
Regulatory framework and registration	Medicines undergo a centralized registration procedure through the EMA or through national authorities under mutual recognition procedures.
Quality and safety control	Implementation of mandatory standards such as GMP, GDP and GCP. Manufacturers and importers need permits stored in the EudraGMDP database.
Pharmacovigilance	A system for monitoring the safety of medicines after they are placed on the market.
Pricing and reimbursement	EU member states independently regulate the prices and reimbursement of medicines, often using reference pricing to ensure affordability.
Ensuring access and sustainability of supply	Formation of lists of critical medicines, joint procurement and development of own production to avoid shortages.

continuation of table 2.1

1	2
Innovation and Intellectual Property Protection	Supporting the development of new medicines and stimulating investment in the pharmaceutical sector. Creation of the European Health Data Space.
Anti-counterfeiting	Mandatory serialization (unique identifiers) for prescription drugs.
Pharmaceutical service	Covers patient counseling and prevention of drug misuse.
Supply chain resilience	Combating drug shortages by creating a list of critically important medicines and strengthening manufacturers' obligations to monitor stocks.
Combating antimicrobial resistance	Introducing special incentives (e.g. vouchers for extending data exclusivity) for the development of new antibiotics.
Environmental sustainability	Requirements for assessing environmental risks throughout the life cycle of medicines — from production to disposal.
Accessibility and equity	Ensuring timely access to medicines for patients in all member states, regardless of their place of residence. This includes incentives for bringing medicines to markets in smaller countries.

EU pharmaceutical policy is based on the Pharmaceutical Strategy for Europe, which was significantly updated as part of a large-scale reform in 2024–2025. This policy is aimed at creating a single pharmaceutical market, while ensuring a high level of protection of citizens' health.

The COVID-19 pandemic and the war in Ukraine have posed new challenges for the pharmaceutical sector in European countries. The dependency of European supply chains and the risk of economic dependency have been exposed. This has

raised awareness of medicine shortages in all Member States, affecting both branded and generic medicines [1].

Shortages occur when the supply of medicines does not meet demand. This is most critical when it comes to critical medicines, i.e. medicines that are necessary to ensure the continuity of care, and when their unavailability leads to serious harm to patients. To better anticipate and manage shortages, MEPs created an EU coordination mechanism in 2025 on national stocks and reserve stocks of critical medicines.

The Commission of Powers decides on the redistribution of medicines from one national stock to one or more other countries in cases where a shortage or interruption in supply has been detected. In March 2025, the Commission identified critical medicines (such as antibiotics, insulin, vaccines and medicines for chronic diseases) and added them to the regulation to ensure their availability in the EU.

The proposal also aims to improve access to certain medicines of common interest but facing market disruptions (fig.2.2) [2,13,29].

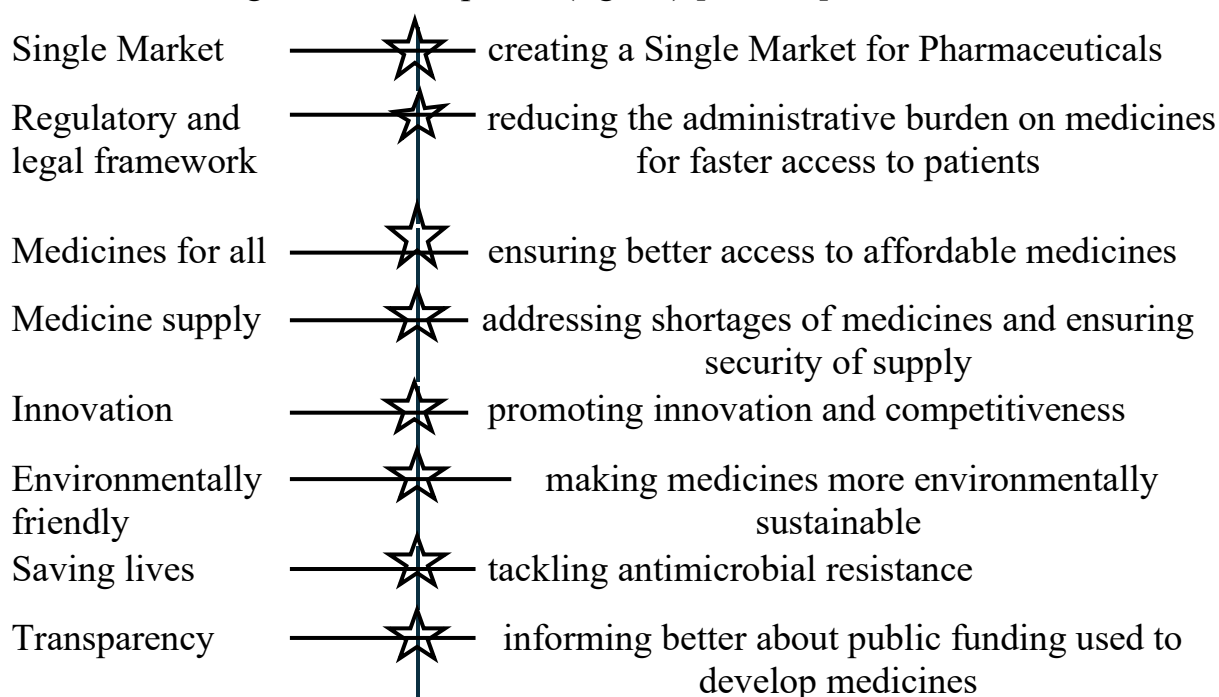


Fig.2.2 Main objectives of the reform of the pharmaceutical sector in the EU countries

The National Medicines Policy is designed as a “dynamic document” that

should be reviewed and updated at least every 5 years to consider changing healthcare needs, advances in digital technology, and inequalities. NPMs need regular review to assess the achievement of goals and track progress over time. Standardized indicators of the pharmaceutical situation allow countries to monitor and assess the impact of its implementation [13].

The functions and strategies of each policy component should be combined in the implementation plan. The inclusion of the NMP in the national health system is necessary to ensure that the goals and objectives of the document are articulated in the overall national health plan and that resources can be used effectively.

Pharmaceutical assistance and provision of consumers with medicines is a controlled and regulated process in the world. However, the ways of regulation are quite different in individual countries, which is influenced by historical experience and differences in legislation. Separate studies of the components of national drug policies (regulation, financing, pricing, supply, promotion and advertising of medicines) by international organizations allow you to get acquainted with the world experience and, accordingly, assess the situation in your country, which is also important in view of the processes of globalization, the creation of unified standards of pharmaceutical education and practice, trends in changes in legislation in other countries [17].

To simplify the comparison of the state of a particular country with international standards, WHO proposes to use special indicators to assess the structure, processes and results of pharmaceutical care and national policies. The implementation of these indicators allows countries to assess the effectiveness of policies to provide medicines to the population and reform the pharmaceutical sector in line with international standards. There are several definitions of "indicators", but the general purpose of assessment tools in practice is to provide the government with information on the state of national goals and priorities for improvement.

To monitor and evaluate the effectiveness of policies, WHO has developed a system of indicators divided into three main categories, the data of which are presented in table 2.2 [17, 22].

Table 2.2

WHO indicators for the assessment of NMP

The name of the indicator	Description
Structural	<p>Assess the availability of the necessary legislative framework and infrastructure:</p> <ul style="list-style-type: none"> • Existence of an official document on the National Drug Policy. • Functioning of the national regulatory authority. • Existence of the National List of Essential Medicines (EML). • Implementation of a licensing system for the production, import and trade of medicines.
Procedural	<p>The degree of implementation of control strategies and mechanisms is measured:</p> <ul style="list-style-type: none"> • The level of compliance of production with GMP standards and distribution with GDP standards. • The quality of the regulatory system, the functioning of the pharmacovigilance system for monitoring adverse reactions. • The application of mechanisms for state regulation of drug prices, availability of incoming quality control.
Effective	<p>Reflect the real impact of the policy on the population and the healthcare system:</p> <ul style="list-style-type: none"> • Prescription indicators: average number of drugs per prescription, share of prescriptions by generic name. • Patient care indicators: average consultation time and time for dispensing drugs. • Availability: share of essential drugs that are available in healthcare facilities

Between 2020 and 2025, EU countries introduced wide-ranging pharmaceutical reforms to improve access, reduce out-of-pocket costs and support innovation amid rising prices for new medicines and growing demand for healthcare. Measures include expanding public insurance, accelerated access to new treatments, more effective pricing and reimbursement tools, and policies to encourage the development of generics and biosimilars. While inequalities remain, both in access and financial protection, primary data show progress in accessibility, availability, and efficiency.

2.2 Historical aspects of the formation and principles of the creation of the National List of Essential Medicines

The sustainability of health systems is a challenge for many European governments. Numerous factors, such as population growth and aging, the increasing burden of chronic diseases, and the introduction and rising cost of new innovative medicines, are putting pressure on health budgets across Europe.

According to the WHO recommendations, NMP is based on the Concept of Basic Drugs, which is very important because it is aimed at protecting the rights of patients and allows you to determine priorities in the development of the health care system and pharmaceutical provision of the population. The main goal: the use of a limited register of drugs most necessary for most of the population.

The main direction of ensuring the availability of pharmaceutical care is the constant improvement of the National List of Essential Drugs. The priority remains the rational use of drugs, since national health care systems are usually unable to compensate for the population's costs for all drugs presented on the pharmaceutical market [13].

The analysis of the literature has shown that the main tasks of the state in the field of drug provision are:

- the most complete saturation of the domestic market with effective medicines, primarily those related to the list of essential medicines;

- expansion of the range of domestic highly effective medicines with stable competitive demand;
- improving the quality, safety and efficacy of medicines; rational use of medicines;
- streamlining the system of their preferential and free leave; improvement of the system for the sale of medicines;
- ensuring stable financing of drug supply to healthcare organizations;
- further improvement of the training of specialists in the field of medicines;
- development of mutually beneficial international cooperation.

NDP for the purposes of social protection of the population uses this concept as a foundation for achieving the main main goals, four of which we presented in figure 2.3 [12,16].

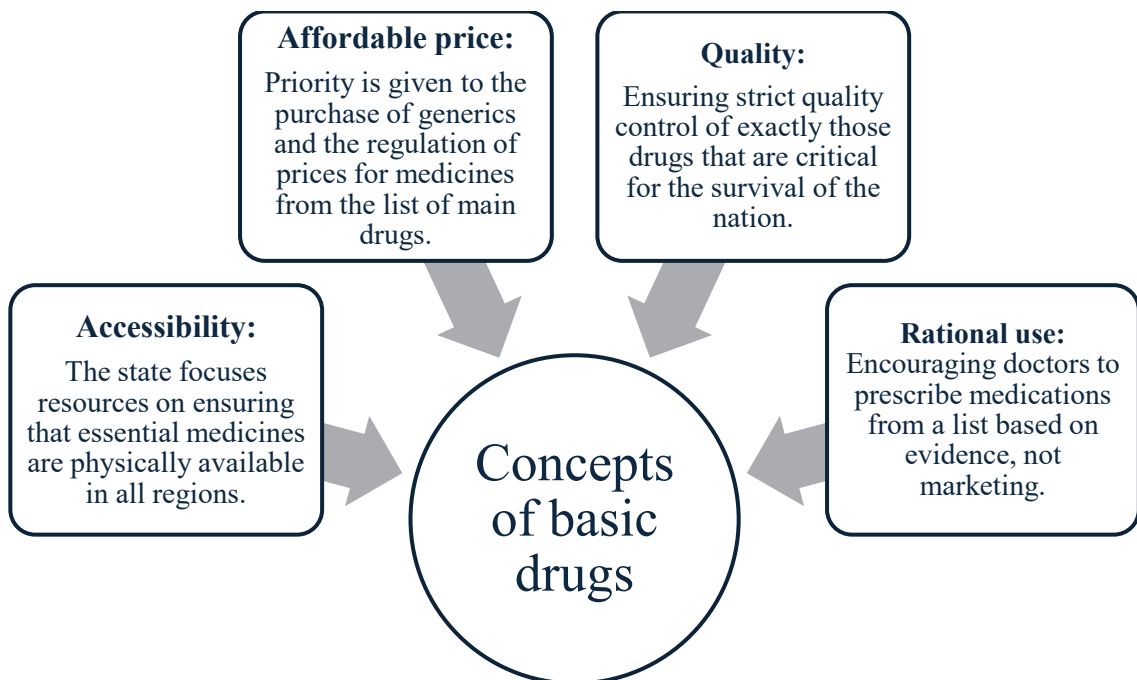


Fig.2.3 The essence of the Concept of essential medicines

Rational use of medicines is based on:

- implementation of protocols for examination and treatment of patients in outpatient and inpatient healthcare organizations and their continuous improvement; ensuring control over the use of medicines;
- proper training of health care professionals.

The National List of Essential Medicines is a list of safe medicines with proven effectiveness, which the state guarantees to the patient free of charge through the rational use of public funds. It was formed based on the basic WHO list and evidence of the effectiveness, safety and economic feasibility of medicines. The development of the National List was preceded by the identification of priority diseases and conditions for the country (those that bear the greatest burden for the state).

The national list is compiled (fig. 2.4) [12,13,16]:

- from the main list, which includes the most effective, safe medicines with the highest indicators of economic feasibility for priority pathological conditions;
- an additional list, which includes medicines for priority pathological conditions that require specialized diagnostic or monitoring equipment, and/or specialized medical care, and/or training of specialists.

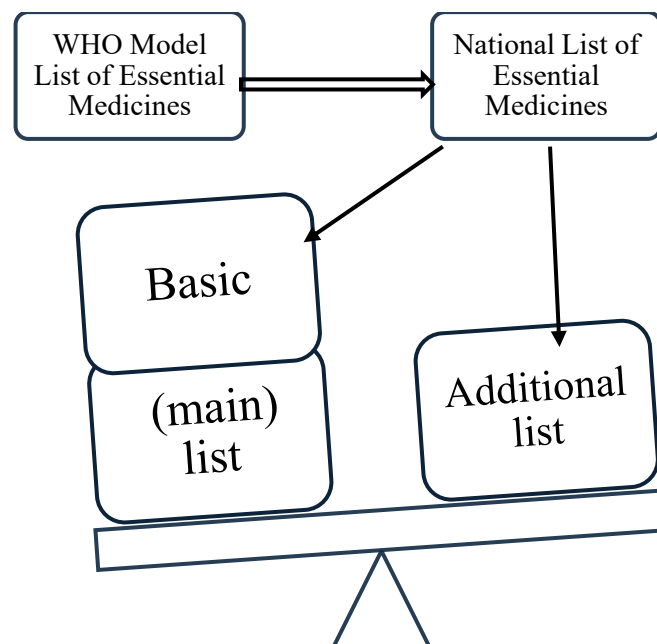


Fig.2.4 Structure of the National List

The process of evaluating and selecting essential medicines is based on the principles of evidence-based medicine, medical technology assessment, clinical efficacy, safety and economic feasibility. This is a systematic selection for the inclusion of drugs in the National List and ensuring public procurement, considering

the priority of treatment of the most common diseases.

Revision of the WHO List of Essential Medicines means regular updating every 2 years the list of the most effective, safe and cost-effective drugs based on new clinical data [24]. For countries, this is a benchmark for adapting national lists, optimizing procurement by 85% of needs, and introducing the AWaRe (Access, Watch, Reserve) classification of antibiotics.

The main values of the revision for countries are:

Modernizing national lists: WHO is updating the list, encouraging countries to adjust their own lists to meet critical health needs [2,27].

Antibiotic Classification Update (AWaRe): Medicines are divided into groups: "Access" (first line), "Surveillance" (high risk of resistance), "Reserve" (last chance), which helps fight antimicrobial resistance.

Optimization of public spending: The national list, based on the WHO, allows you to cover 85% of the needs of hospitals, providing proven efficiency for budget funds.

Introduction of new therapies: Adding more effective remedies (e.g. for the treatment of chronic diseases, cancer) or removing obsolete ones.

Harmonization of standards: Promotes the use of uniform international standards, improves the provision of medicines and facilitates procurement.

More than 150 countries use the WHO Essential Medicines List to guide national policies, ensuring maximum cost-effectiveness of health care and access to life-saving medicines. It is a science-based tool that ensures cost-effectiveness and safety of treatment.

The importance of the basic list of medicines lies in its scientific basis. Each drug on the list undergoes thorough testing for effectiveness and safety. Economic feasibility is reflected in the priority given to those medicines that have the best price-quality ratio, which is critically important for government budgets. This list helps countries prioritize procurement so that the most needed medicines are always available in pharmacies and hospitals, confirming their availability.

Conclusions to chapter 2

After studying the material, we can conclude that the requirements of an effective national policy are laid down in clear and mutually agreed goals; appropriate strategies (policy measures) adapted to national resources; and the necessary technical means to achieve the goals.

While drug policy strategies may vary from country to country — depending on the specific political, economic, and social and health conditions — the overall policy goals and key strategies are largely the same for all countries.

European Union countries are committed to improving access to medicines for the entire population. However, many patients across Europe face limited access to medicines, which undermines public health. The EU legislature has been implementing changes to pharmaceutical policy in recent years, prioritizing equal access to essential medicines for all Europeans. Equitable access is an achievable goal, as most essential medicines are already generic or biosimilar.

The WHO List of Essential Medicines is the most important guiding document that helps countries choose life-saving medical products that should be widely available and affordable at all levels of the health system. This mechanism is the global standard for decision-making in the field of healthcare.

The Medicines List is both a technical and political tool that affects not only essential medicines but also who can use them and when. These WHO tools are part of its valuable achievements in health, and they are normative in nature.

CHAPTER 3

EVALUATION OF NATIONAL DRUG POLICY IN MOROCCO USING WHO INDICATORS

3.1 Analysis of the implementation of the drug policy and assessment of the Moroccan National Development Plan using WHO indicators

Since the beginning of the 60s, significant socio-economic changes have taken place in developing countries. These changes have had a serious impact on both health care in general and the system of circulation of medicines in particular. The national health sector in Morocco has made significant and varied successes, including the establishment of numerous general and specialized health facilities and a network of pharmaceutical ventures. In the field of medical care, medicines play an important role provided they are available, affordable, pricing and used correctly. Therefore, national pharmaceutical policy is an integral part of national policy.

At the present stage, the pharmaceutical sector of Morocco is one of the most developing countries in the Middle East of Africa (MENA). In recent years, the country has adopted regulations that clearly regulate this area of activity.

From the point of view of the development of pharmaceutical activity, the main legislative milestones in Moroccan legislation can be distinguished [11,15]:

1. 1963. A code of ethics was adopted for orders of pharmacists (guilds, professional associations, syndicates, naqaiba (Arabic) pharmacy, industrial).
2. 1987. Opening of the Pharmaceutical Department of the Faculty of Medicine of the University of Rabat. Creation of national pharmaceutical education.
3. 2002. Law 65-00 describes the legal framework for compulsory basic health insurance (AMO) in Morocco.
4. 2008. Entry into force of the Code of Medicines and Pharmaceuticals (Law No. 17-04).
5. 2008. Order of the Minister of Health No. 902-08 5654 introducing a

technical standard for the installation, sanitation and area associated with premises to accommodate pharmacies, as well as technical standards.

6. 2012. Decision of the Minister of Health No. 111, document prepared National Medical Policy of Morocco.
7. 2013. Decree No. 2-13-852 reforms the pricing of medicines. It establishes new rules for calculating the public sale price of generic and branded medicines, both locally produced and imported, based on international comparisons and the rate of price reduction.
8. 2024. Law No. 98-18, reorganizes the National Order of Pharmacists, reinforcing its role in access to quality medical care, professional ethics and management. It modernizes GPP, focused on rethinking the roles of the pharmacist in healthcare, on ensuring that every citizen benefits from medicines that meet the strictest safety standards.

The NDP document was prepared based on the recommendations of the Advisory Commission on Medicines and Medical Devices, since analytical studies of 2004-2012, and with the technical support of the World Health Organization [19,20,30,35,36].

The NDP of Morocco is coordinated by the Interstate Commission for Standardization, Registration, Quality Control of Medicines, Medical Equipment.

The operation of the pharmaceutical sector in Morocco has its own characteristics, dictated by EU rules and local policies. Morocco's pharmaceutical sector, the second largest in Africa, combines strong local production with strict regulation, which is influenced by European standards and national pricing policies. Therefore, there is a need to create an effective NDP as an important component of the Health Sector Strategy [4,7-9]. The objective was to define a clear vision with specific target to guarantee access to medicines and pharmaceutical products, while ensuring the development and impact of the pharmaceutical sector. The document enshrines obligations to improve governance in the sector, clearly defines the responsibilities of everyone in this area, particularly the introduction of a new pricing system for medicines, strengthening the regulation and control of medical

products, and the implementation of pharmaceutical assistance to the population.

The evolution of global processes is prompting the Moroccan health sector and the state to take measures to accelerate the local development of the pharmaceutical industry. The country's authorities have made it a priority to develop their own pharmaceutical industry to reduce costs, create jobs and make medicines more affordable for patients. For this purpose, a system of state regulation of prices for more than 3000 drugs has been introduced: losses to pharmacies are compensated from the insurance fund. Fixed wholesale and retail prices made it possible to reduce costs at the state level and create competitive opportunities for the Moroccan pharmaceutical business. At the African level, the Kingdom is now one of the leading countries in local pharmaceutical production. Local production has significantly improved patients' access to quality medicines at affordable prices [25-27].

In 1969, the Laboratory for the Quality Control of Medicines was established to determine the quality of domestic and imported pharmaceutical products. The licensing authority makes an official conclusion on the safety and efficacy of a product only after thorough examination.

The pharmaceutical sector in Morocco is predominantly private (production, import, distribution), meeting 80 to 90% of the Kingdom's needs and covering a significant share of distribution, while remaining under strict regulation by the Ministry of Health through the Medicines and Pharmaceuticals Authority [29].

An effective National DDP based on WHO indicators requires clear and mutually agreed goals aimed at providing the population with high-quality pharmaceutical care. It agreed goals, involving all stakeholders, and encompasses selection, financing, regulation and delivery to improve public health. To achieve the main objectives, they must be adapted to the national resources of the country and the necessary technical means. The strategy contains a comprehensive set of simple, objective and reliable indicators that can be adapted to the national context. This will allow countries and international organizations to draw conclusions about conformity assessment and allow the problem to be identified in a specific way.

A national pharmaceutical policy can only be effective if it is based on strong political commitments and quantifiable objectives. To ensure high-quality healthcare, this policy is generally structured around three strategic directions, measured by specific indicators (fig. 3.1) [19,36].

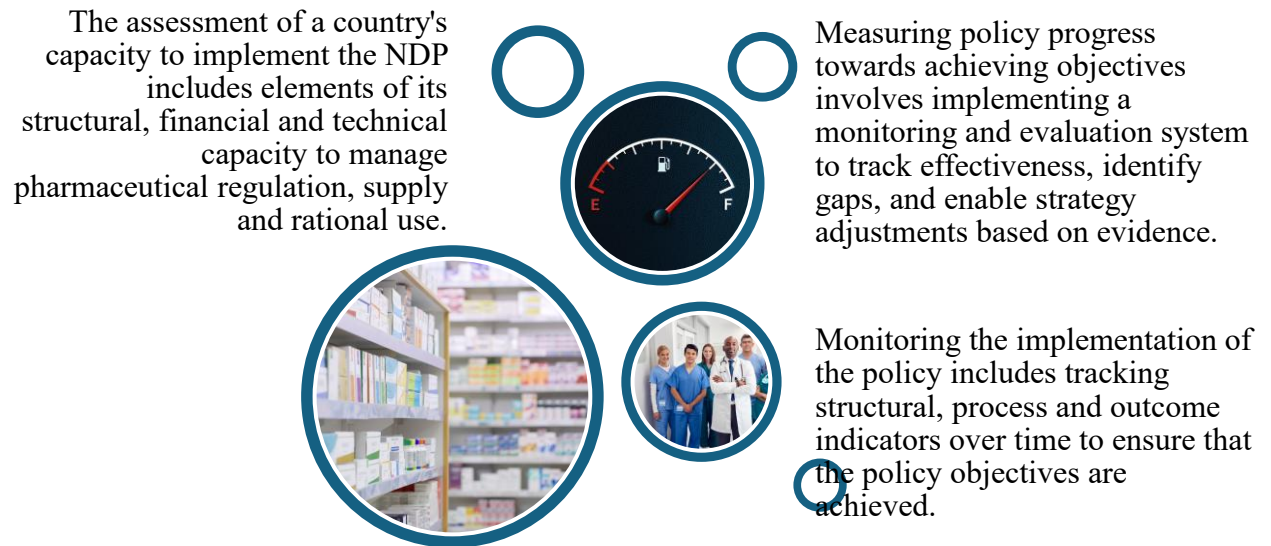


Fig.3.1 Key aspects of monitoring the implementation of national drug policy

Morocco's national pharmaceutical policy, particularly the new strategy for 2021-2025, aims to ensure universal health coverage, free access to quality medicines and the promotion of generic medicines, which is in line with WHO goals. It relies on price controls, the creation of the National Medicines Agency and the strengthening of local production, which currently covers 65% of consumption [36].

Based on WHO data for Morocco, key health indicators reflecting trends in medication consumption and lifestyle. The Moroccan Ministry of Health has focused its efforts on the creation and implementation of a Health Policy, which includes a National Medicines Policy, to ensure stable operation in the process of regulating the market and guaranteeing human safety.

The policy variables listed in the table were obtained from Moroccan Ministry of Health reports and data from the WHO website containing information on drug policy implementation. The key elements of the National Pharmaceutical Policy of Morocco can be depicted in the form of a table (table 3.1) [8,10,36].

Table 3.1

Variables characterizing pharmaceutical policy, with reasons for introduction or withdrawal in the analysis

Policies that are expected to improve resource management	Introduction/withdrawal
1	2
Legislative and regulatory framework	
Pharmaceutical policy (document)	introduction
NMP implementation plan	introduction
NMP integrated into national health plan	introduction
Drug regulatory authority	introduction
Medicine registration and licensing	introduction
National strategy to contain antimicrobial resistance	introduction
Antibiotics not available over the counter	introduction
Active monitoring of adverse drug reactions	introduction
Joint regulation of drug promotion by government and industry	withdrawal
Choice of essential medicines	
State obligation to provide essential medicines	introduction
Selection process (market request and based on the profile of morbidity and prevalence of diseases in the population)	introduction
Selection criteria (cost-effectiveness, clinical efficacy and acceptable safety profile)	introduction
Traditional and herbal medicines	introduction
Standard treatment protocols	introduction

continuation of table 3.1

1	2
Participation and consultation on human resources issues	
The role of government in planning and monitoring training and human resource development for the pharmaceutical sector	introduction
National and international collaborating networks	introduction
Prescribing by pharmacists in public primary care	withdrawal
Motivation and continuing education	withdrawal
Ethical framework and code of conduct	introduction
Supply management systems	
Local production	introduction
Supply chain strategies and combining public and private sector alternatives	introduction
Procurement mechanisms, distribution and storage	introduction
Inventory control, including prevention of theft and waste	withdrawal
Monitoring and evaluation management policy	
System of duties and obligations	introduction
Indicators for monitoring	introduction
Periodic monitoring	introduction
The National List of Essential Medicines has been updated over the past 5 years	withdrawal
Coverage of drug costs by state insurance is limited to the national list of essential medicines	introduction
Generic prescribing / substitution in the public sector	introduction
National formulary updated in the last 5 years	introduction
Research	
Operational research	introduction
Pharmaceutical development and clinical research	introduction

continuation of table 3.1

1	2
Rational use of medicines	
Multidisciplinary national body for coordination of drug policy	introduction (2025: Moroccan Agency for Medicines and Health Products)
Standard treatment guidelines as a basis for drug selection and training of healthcare professionals	withdrawal
Rational medicine use training for health personnel	Introduction (to ensure in hospital)
Education about rational use of medicines for consumers	Introduction (significant differences remain in policy implementation and practice)
Promotional activities	introduction
Accessibility	
Taxes or tariffs on essential medicines	Introduction (imported medicines are subject to customs duties, and policies often impose higher duties to protect the local pharmaceutical industry)
Distributor margins and pricing	Introduction (are strictly regulated by the Ministry of Health, which sets a 10% markup for wholesale distributors on the public price and a 30% markup for retail pharmacies)
Free basic medicines at the health care point for children under 5 years old	introduction
Trade-related intellectual property mechanisms	introduction

Indicators for the assessment of NPLs are tools developed by WHO that measure the structure, process and results of pharmaceutical policy, focusing on accessibility, quality, rational use and safety. In Table 3.2, we have identified key categories including drug prescribing models, patient care, facility capacity, and progress in policy implementation [3,5,22].

Table 3.2

Indicators for assessing national medicines policy

Indicators	Morocco “data” (2024)
Background information (demographic data)	
Total population	38540127
Average population growth	1,2%
Level of urbanization	City – 61%; Rural-39%
Life expectancy at birth in years	Total 75
GDP per capita	\$ 3,478 to 4,366 USD
GDP growing	2.6 %
Adult mortality rate (probability of dying between 15 and 60 years) per 1000 population	males – 141; females – 89 total - 115
General government health expenditure	6.82%
Total expenditure on medicines	1.5 billion USD (22% of total health)
Structural and process indicators (pharmaceutical related data)	
Total number of prescribing drugs	4.4 drugs per prescription
Total number of pharmacists	11000 (4.8 per 10.000 inhabitants)
National essential drugs list	6 list -2019
Number of registered products	over 7000
Number of manufacturers	50
Number of wholesale distributors	60
Total number of pharmacies	11000
Government regulates drug prices	covering over 1,700 drugs
Patented/generic medicines	42.2%/57.8%

An assessment of NDP indicators, including efficacy and safety, affordability, availability and friendliness, and rational use of medicines approved by the Advisory Commission on Medicines and Medical Devices during 2012–2023, is shown in figure 3.2. The number of drug dossiers evaluated is 37. ES stands for Efficiency and Safety. RU stands for rational use. AC stands for accessibility and AF stands for affordability [5].

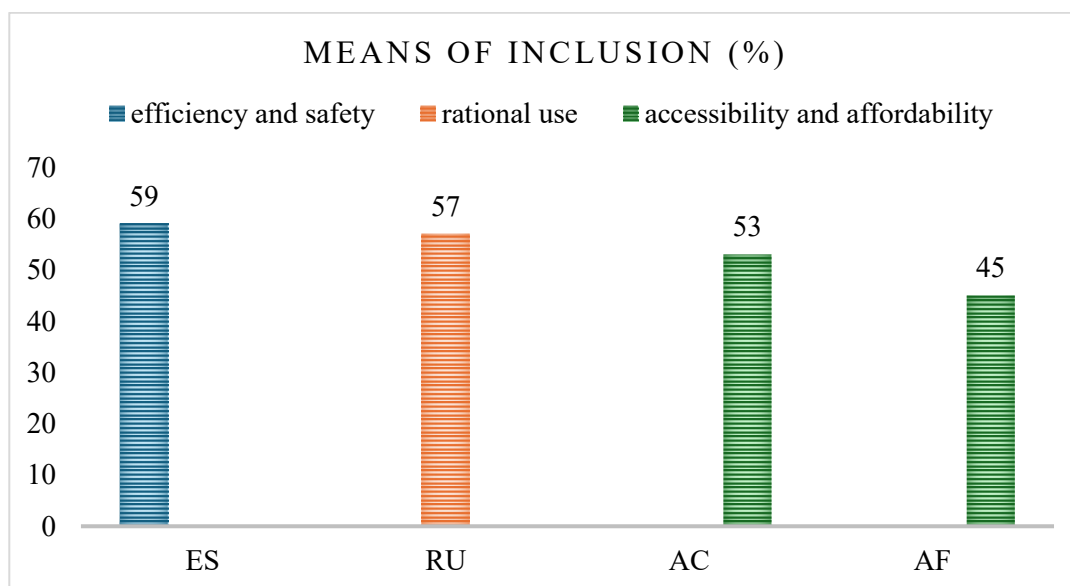


Fig.3.2 Estimation of NDP indicators

Morocco's national medicines policy, in line with WHO standards, focuses on increasing access to affordable, quality essential medicines through universal health insurance, strengthening regulatory capacity, and improving supply chain efficiency. Key advances include lowering generic prices and improving, albeit still developing, partnerships between public and private drugs, as well as efforts to bridge regional disparities in drug availability. Key indicators assess medical coverage and financial difficulties associated with healthcare costs.

The criteria used by the Committee for the selection of essential medicines are 50–60% compatible with the achievement of the main objectives of NLP. In general, we can conclude that a national plan for the reform of the pharmaceutical sector in Morocco exists but needs some changes. Further research is needed to assess the exact impact of drug supply management on health care in Morocco [25].

3.2 Comparative analysis of 24th WHO Model list of essential medicines and the National list of Morocco

The key elements of the National Policy are the National List of Essential Medicines (NLEM). The NLEM is central to the rational management of health care and the supply of essential medicines in any society.

Careful selection of a limited edition of the main drug contributes to improving the quality of medical care, improving the management of medicines and resources. The selection of drugs is carried out after obtaining a marketing authorization for a pharmaceutical product, which determines its presence in the country. Then, based on the prevalence of diseases, actual data on the effectiveness and safety of drugs, as well as their comparative cost-effectiveness, a list of essential drugs can be developed.

The World Health Organization is the secretariat of the Committee of Experts on the Selection and Use of Essential Medicines. The WHO Indicative List of Essential Drugs serves as a guide for the development of national and institutional lists of essential drugs, updated and revised every two years.

In Morocco, the first National List of Essential Medicines was published in 1980, shortly after the WHO introduced the concept worldwide in 1977. This initiative aimed to streamline the use of pharmaceuticals and ensure access to primary health care. Since then, the list has undergone several significant revisions to adapt to the country's changing epidemiological needs. This document presents a national list of vital medicines. It contains numerous records classified into therapeutic categories and subcategories. For each medicinal product, the international nonproprietary name (INN), available forms and dosages, as well as an indication of whether the medicinal product is vital.

Notable updates include the 2012 and 2019 editions, often referred to as the "National Nomenclature." The list of medicines is constantly growing in terms of the number of drugs included in the list with each update (fig. 3.3) [4,9,11,16].

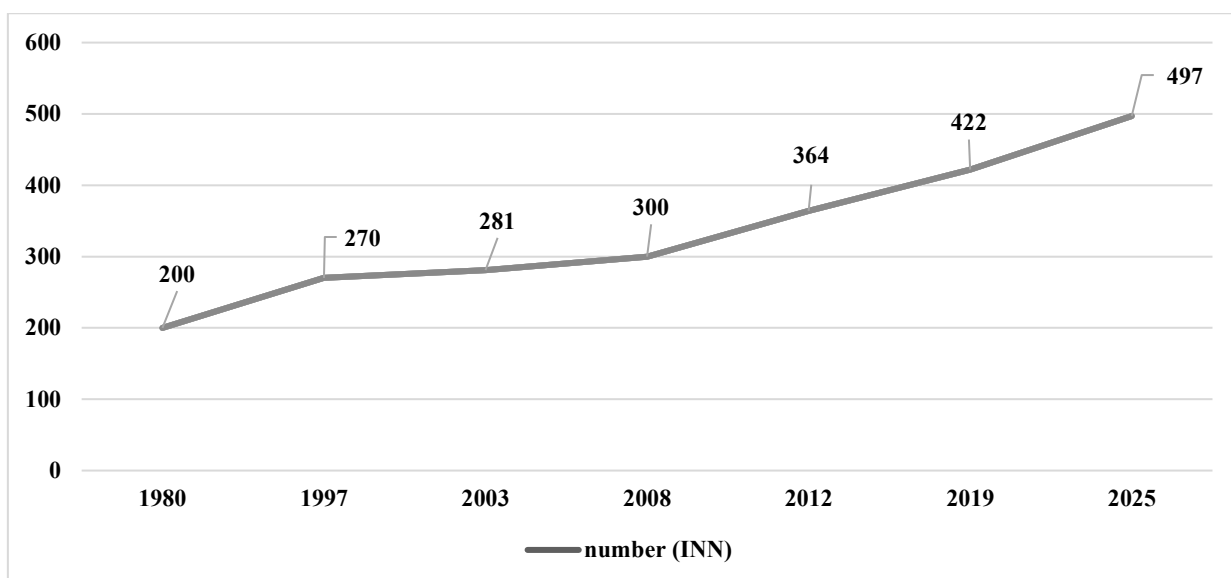


Fig.3.3 Evolution of Morocco's National list of Morocco with the number of additions

The 24th WHO Model List of Essential Medicines and the 10th Approximate List of Essential WHO Medicines for Children have been approved by the WHO Expert Committee on the Selection and Use of Essential Medicines in 2025 [13].

After review, the WHO Expert Committee on the Selection and Use of Essential Medicines recommended the addition of 21 new molecules, focusing on meeting public health needs and improving access to life-saving therapies worldwide.

For the 2025 update, seven applications for cancer drugs have been submitted, including several immune checkpoint inhibitors. New treatments include medications for leukemia, lung cancer, cervical cancer, and colorectal cancer.

With the official establishment of the National Commission on Essential Medicines in 2024, on September 26, 2025, a large-scale process of revising the new 7th edition of the Morocco List of Essential Medicines began. The commission responsible for developing and regularly updating this list includes the Moroccan Agency for Medicines and Medical Devices. As of the beginning of 2026, the National List of Essential Medicines in Morocco has undergone several updates as part of a large-scale health care reform.

The purpose of our study was to conduct a comparative analysis of the current

National Lists of Morocco and WHO. The analysis shows that the WHO National List of INNs consists of 523 INNs. The main list includes the most effective, safe medicines with the highest indicators of economic feasibility for priority pathological conditions, their total number is 390 INN. The additional list includes 133 INNs [35].

Compared to the WHO, the Morocco National List contains 417 INNs. The main list includes 328 INNs. The additional list included 89 INNs (fig. 3.4) [19].

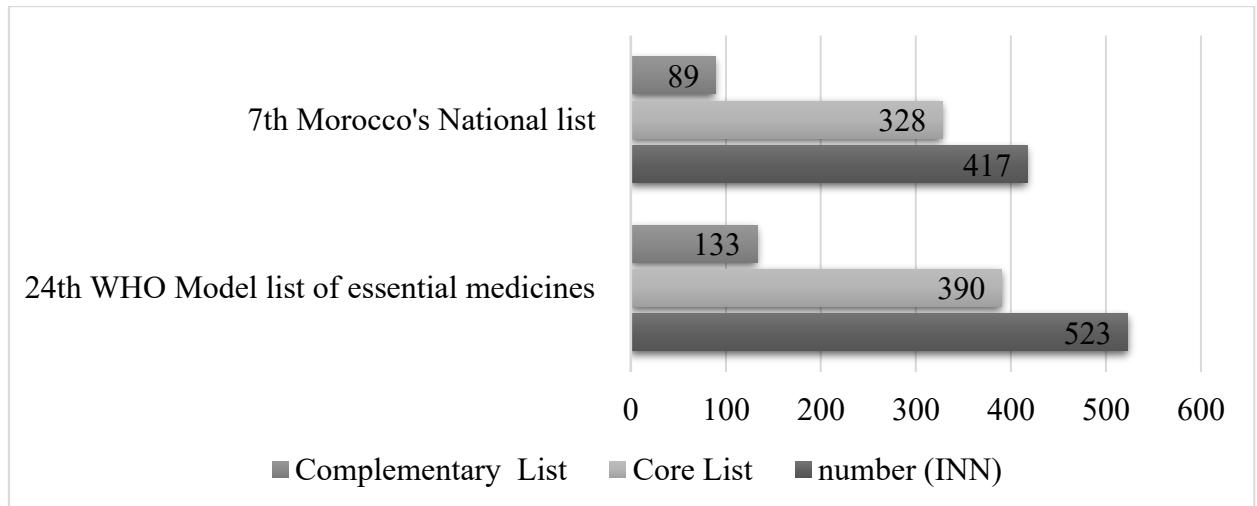


Fig.3.4 Comparative analysis of the current Moroccan National List with the 24th WHO List by number of INNs.

An additional list includes remedies for priority diseases that require specialized conditions. Usually, their share is approximately 25% of all items in the list.

The publication of the national list of essential medicines in Morocco takes place regularly, and it contains a complete list, which includes more than 390 medicines. Although the WHO updated its Model List of Essential Medicines 2025 (EML) in September 2025, the national lists of countries are adapting gradually. Access to essential medicines as a right face's difficulties with the lack of an official 7th national list of essential medicines. Although there is a national policy on medicines in Morocco, it has not been published, indicating the need for increased transparency. The main drugs listed in EML-24 should be the basis of any national list of essential drugs, therefore, at the next stage of our work, we conducted a

comparative analysis of the list of WHO main drugs with 7-MNL to determine similarities and differences in their composition.

Detailed information on the quantitative correspondence for international nonproprietary names is shown in table 3.3 [13,19].

Table 3.3

A brief overview of similarities and differences between the WHO EML and Morocco

ATC classification (Description)	Number of drugs (WOH MLEM) by INN	Number of drugs (MLE) by INN or	Number of WHO EM not included in the MLE	EM WHO in MLE (%)
1	2	3	4	5
Drugs that affect the digestive system and metabolism				
A01–A016	73	65	8	89,04
Agents affecting the blood system and hematopoiesis				
D01–D06	45	36	9	80,0
Drugs that affect the cardiovascular system				
C01–C10	51	41	10	80,39
Dermatological products				
D01–D11	31	28	3	90,32
Drugs affecting the genitourinary system and sex hormones				
G01–G04	15	9	6	60,0
Hormone preparations for systemic use (except sex horm/ insulins)				
H01–H05	6	4	2	66,66
Antimicrobials for systemic use				
J01–J07	91	74	28	81,31
Antineoplastic and immunomodulatory agents				
L01–L04	44	33	11	75,0
Drugs affecting the musculoskeletal system				
M01–M09	15	10	5	66,66

continuation of table 3.3

1	2	3	4	5
	Drugs that act on the nervous system			
N01–N07	58	47	11	81,03
	Antiparasitics, insecticides and repellents			
P01–P03	25	21	4	84,00
	Agents acting on the respiratory system			
R01–R07	23	18	5	78,26
	Means that act on the sensory organs			
S01–S03	7	3	4	42,85
	Various means			
V01–V10	39	28	11	71,79
Total	523	417	106	average–74,8%

According to the results of the analysis of the composition of the National List (WHO) by anatomical groups, it was found that this list contains drugs under 523 international nonproprietary names (INN) by 14 anatomical groups according to ATC classification. The MNL of them included 392 drugs according to the INN. The total number of drugs listed in MNL -2025 is 417.

Morocco's national list of essential medicines covers a wide range of medicines, from painkillers and antibiotics to drugs for the treatment of cardiovascular and neurological diseases. This list is crucial for managing healthcare and drug supply in a country.

It is noteworthy that this list demonstrates significant compliance with the WHO Model List, with more than 74% similarity in the number of medicines. This high degree of consistency reflects a systematic and consistent approach to updating and disseminating information on essential medicines.

Based on the overall identification of analogues from both lists, the MPL has practically fully complied with the WHO recommendations (more than 80%) for essential drugs in 5 of the 14 standard therapeutic sections (figure 3.5).

The greatest discrepancies in the identity of the drug composition are recorded in section 13 in Means acting on the sense organs, this is explained using folk medicine for these diseases [13,20,21].

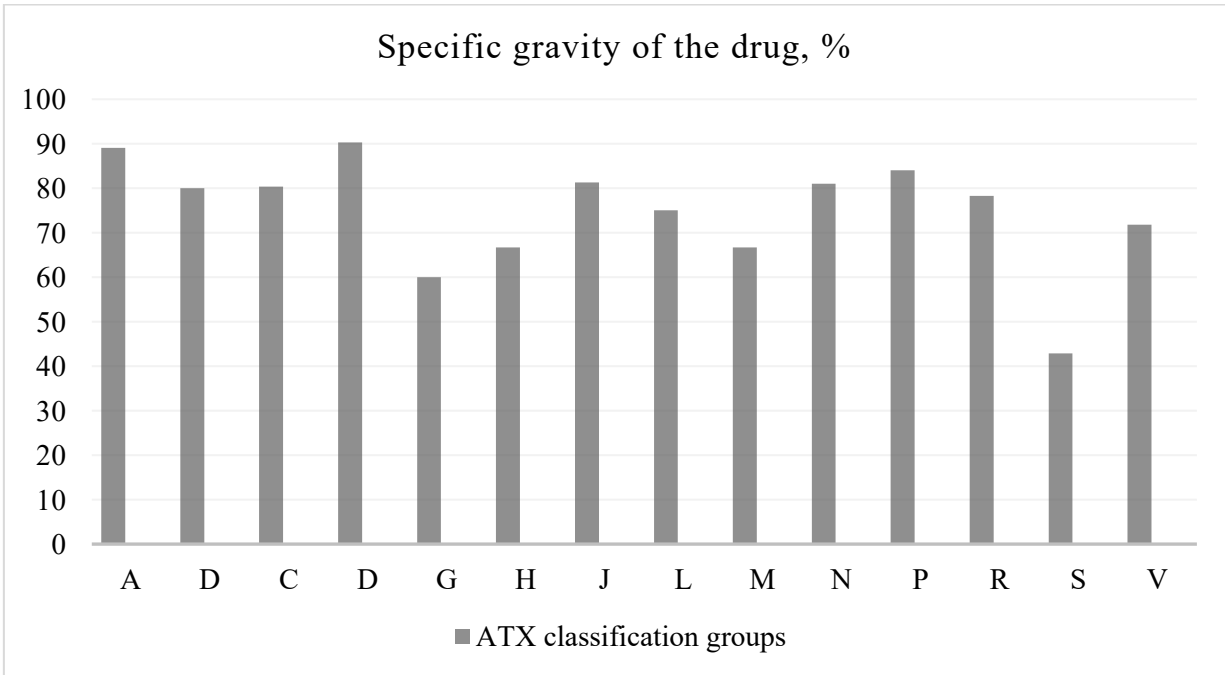


Fig.3.5 Share of drugs from the WHO List in the 7th Moroccan List (according to the ATC classification)

Morocco's national list of essential medicines in 2025 is in line with WHO recommendations, prioritizing the availability of key drugs for public health. The list focuses on chronic diseases (diabetes, cardiovascular disease, mental disorders - dominant share), basic vaccines (hepatitis A/B, measles, rabies) and basic pain management, while strengthening national pharmaceutical regulation. The dominant share of 65 drugs, which make up 15%, falls on group A10 – Drugs that affect the digestive system and metabolism of antidiabetic drugs, which explains the spread of diabetes mellitus in the country. Antimicrobials for systemic use consist of 74 drugs, which is 17.7%, and Drugs that act on the nervous system, 47 (11.27%).

Morocco is included in the Global Repository of National Lists (nEMLs). However, the latest widely uploaded version often dates to previous years (e.g. 2019), while new editions are implemented through internal decrees of the Moroccan Ministry of Health [19].

Morocco is working to integrate the national list into the digital platform to improve inventory management and procurement transparency Morocco World News. The regulatory framework on this issue is supported by Law 17-04 (Code on Medicines and Pharmaceuticals) and directives from the Ministry of Health and Social Protection [10].

Conclusions to chapter 3

According to the study, the evaluation of Morocco's national medical policy according to WHO indicators revealed the need for changes in the following areas.

Rational use of medicines: implementation of evidence-based treatment protocols and monitoring of prescriptions to avoid excessive or inappropriate use of medicines.

Availability and pricing: development of reimbursement programs (reimbursement of cost) and improvement of mechanisms of state regulation of prices for vital drugs.

Quality and control: optimization of the system of state quality control at all stages of drug circulation and development of the institute of "authorized persons" in pharmacies.

An analysis of sources showed that the Moroccan government has implemented critical changes affecting the list of essential medicines in 2025.

According to the strategic plan "Health 2025", special emphasis in the national list is placed on infectious diseases, including antiretroviral therapy (HIV/AIDS). For the treatment of non-communicable diseases, including drugs for diabetes, hypertension and oncology. The number of vaccines fully corresponds to the WHO list, which meets its WHO standards.

An assessment that can be made by examining relevant sources shows that while Morocco has made significant progress in reforming its pharmaceutical policy, further efforts are needed to strengthen the regulatory framework, ensure equitable distribution and expand coverage to achieve the WHO indicators for a sustainable health system.

GENERAL CONCLUSIONS

1. The study found that over the past 5 years, Morocco has significantly updated its pharmaceutical landscape to expand health insurance, focusing on lowering drug prices, promoting generic drugs and restructuring regulatory oversight. Key reforms include VAT exemptions from 2024 for all medicines, the ongoing revision of the prices of original medicines and the creation of the Moroccan Agency for Medicines and Medical Devices.

2. Morocco uses WHO indicators to assess prices and availability of medicines. The NLP 2021-2025 builds on the 2025 Health Plan to improve availability, quality, and affordability, with a focus on essential medicines.

3. The sector is supported by a high-performance industry (50 laboratories), which is constantly being reorganized, aimed at greater health sovereignty and improved supply chain management.

4. The national policy is integrated into the expansion of statutory health insurance. The NLP was developed in close cooperation with WHO to ensure access to medicines, their quality and rational use. It is in line with the WHO recommendations for the development of a national pharmaceutical policy.

5. Morocco uses protocols approved by the WHO and the International Health Action Organization to measure critical indicators such as the price, availability and availability of medicines.

6. Security is constantly monitored in the country. Drug Safety Centers are actively involved in monitoring and reporting adverse drug reactions to update treatment recommendations.

7. Morocco's NLP is structurally based on the recommendations and evaluation tools of the World Health Organization. However, challenges remain strengthening market surveillance and improving the availability of services in the public sector.

8. Our study did not find any clear differences in the choice of WHO essential medicines. The analysis showed that the WHO List of Essential Medicines

contains an average of 74.8% of essential medicines, which means that more than half of the WHO List of Essential Medicines corresponds to the WHO Model List of Essential Medicines 2025.

9. Morocco's national list of essential medicines covers a wide range of medicines, from painkillers and antibiotics to drugs for the treatment of cardiovascular and neurological diseases. This list is crucial for managing healthcare and drug supply in a country.

10. At the last stage of our study of drug lists, we concluded that the NP of medicines is the only official document that contains basic information about the spectrum of drugs recognized by the state as high-quality, safe and effective. Accordingly, the population should be provided with such means. The structure and content of the analyzed list is formed based on the current edition of the Basic List of Essential Medicines Recommended by the WHO. Such a list contains a few criteria, strict adherence to the requirements of which is a prerequisite for the inclusion of drugs.

REFERENCES

1. Comparative analysis of indicators that determine the effectiveness of the implementation of socio-economic determinants of health in Europe and Ukraine / A. Kotvitska et al. *ScienceRise: Pharmaceutical Science*. 2021. Vol. 3(31). P. 34–41. DOI: 10.15587/2519-4852.2021.235787.
2. Kotvitska A. A., Volkova A. V. Theory and practice of pharmaceutical supply system development on the way of realisation of sustainable development goals. *Pharmaceutical Journal*. 2025. Vol. 80(3). P. 3–20.
3. Morocco – Country Profile. URL: <https://www.fao.org/country-profiles/index/en/?iso3=MAR> (Date of access: 02.04.2026).
4. New Program in Morocco Supports Improved Access to Quality Healthcare for All. URL: <https://www.worldbank.org/en/news/press-release/2023/06/19/new-program-in-morocco-supports-improved-access-to-quality-healthcare-for-all> (Date of access: 02.04.2026).
5. The World Bank in Morocco. URL: <https://www.worldbank.org/en/country/morocco> (Date of access: 02.04.2026).
6. World health statistics 2020: monitoring health for the SDGs, sustainable development goals. Geneva : World Health Organization, 2020. 12 p. URL: <https://apps.who.int/iris/handle/10665/332070> (Date of access: 02.04.2026).
7. Arrête du ministre de la sante № 902–08 du 17 rejev 1429 (21 juillet 2008). URL: <http://www.khidmat-almostahlik.ma/portal/sites/default/files/reglementation/Arrete%20n%20902-08.pdf> (Date of access: 02.04.2026).
8. Politique nationale du médicament: quels enjeux essentiels au cœur du modèle de développement du royaume? / Association Marocaine de l'Industrie Pharmaceutique. Casablanca, 2020. URL: https://www.fmiip.com/v2/wp-content/uploads/2020/03/MEMORANDUM-AMIP_CSMD10032020_compressed-1.pdf (Date of access: 02.04.2026).
9. Le secteur de la pharmacie au Maroc. *Académie nationale pharmacie*. Paris, 2019. URL: https://www.acadpharm.org/dos_public/LE_

SECTEUR_DE_LA_PHARMACIE_AU_MAROC_2.pdf (Date of access: 02.04.2026).

10. Loi № 17-04 relative au Code des médicaments et des produits pharmaceutiques. Royaume du Maroc. URL: http://www.sgg.gov.ma/Portals/0/profession_reglementee/ (Date of access: 02.04.2026).

11. Politique pharmaceutique nationale / Ministère de la Santé du Royaume du Maroc. URL: https://pharmacie.ma/uploads/pdfs/presentation_ppn_louardi.pdf (Date of access: 02.04.2026).

12. The selection and use of essential medicines, 2025: report of the 25th WHO Expert Committee on Selection and Use of Essential Medicines, executive summary. Geneva : World Health Organization, 2025. DOI: 10.2471/B09544.

13. eEML-Electronic Essential Medicines List. URL: <https://list.essentialmeds.org> (Date of access: 02.04.2026).

14. International Pharmaceutical Federation. Good Pharmacy Practice guidance. *FIP*. 2017. URL: <https://www.fip.org> (Date of access: 02.04.2026).

15. Sallam M., Madkour M. Legal and regulatory framework for pharmacy practice in Morocco: analysis and recommendations. *Moroccan Health Law Review*. 2019. Vol. 2(1). P. 7–24.

16. Model List of Essential Medicines (relevant OTC classification). *World Health Organization*. 2021. URL: <https://www.who.int/medicines> (Date of access: 02.04.2026).

17. Guidelines for developing national drug policies. *World Health Organization*. 1988. URL: <https://iris.who.int/handle/10665/40427> (Date of access: 02.04.2026).

18. Top national pharma markets by market share 2024. *Statista*. URL: <https://www.statista.com/statistics/245473/market-share-of-the-leading-10-global-pharmaceutical-markets/> (Date of access: 02.04.2026).

19. Liste des Médicaments Essentiels 2023. URL: <https://www.scribd.com/document/477444312/Maroc-medicaments-essentiels>

(Date of access: 02.04.2026).

20. PLAN « SANTÉ 2025 » 3 Piliers / 25 Axes / 125 Actions. URL: https://extranet.who.int/countryplanningcycles/sites/default/files/public_file_rep/MAR_Morocco_Plan-de-santé-2025.pdf (Date of access: 02.04.2026).

21. WHO. Model List of Essential Medicines – 24th List. *World Health Organization*. 2025. URL: <https://www.iccp-portal.org/sites/default/files/2025-09/B09474-eng.pdf> (Date of access: 02.04.2026).

22. Country Health Profiles 2025 – Public Health- European Commission. URL: https://health.ec.europa.eu/state-health-eu/country-health-profiles/country-health-profiles-2025_en (Date of access: 02.04.2026).

23. The Selection and Use of Essential Medicines (2002) – WHO Technical Report Series, № 914. *World Health Organization*. Geneva, 2003. URL: <https://iris.who.int/server/api/core/bitstreams/d3de1e8f-9c81-416c-b411-d93405af047d/content> (Date of access: 02.04.2026).

24. The selection and use of essential medicines: report of the WHO Expert Committee on Selection and Use of Essential Medicines, 2025. *World Health Organization*. Geneva, 2026. URL: <https://iris.who.int/server/api/core/bitstreams/e1ba8eb2-28a4-49cb-8e97-4ae69d8af915/content> (Date of access: 02.04.2026).

25. Labari F. Accès aux médicaments onéreux au Maroc: une lecture dans la convention «tiers-payant». *Revue horizons sociologiques*. 2025. Vol. 1(9). URL: <https://revues.imist.ma/index.php/Horizons-Sociologiques/article/view/56878> (Date of access: 02.04.2026).

26. Décret № 2-13-852. *Bulletin officiel*. 2013. № 6214, 15 Safar 1435. P 2732. URL: <https://www.sante.gov.ma/Reglementation/TARIFICATION/2-13-852.pdf> (Date of access: 02.04.2026).

27. Louati N., Rachid El J. The general framework for drug pricing in Morocco: Towards a more efficient approach to determining a fair price. *Journal of Economics, Management, Environment and Law*. 2021. Vol. 4(2). P. 58–70.

28. Cost-containment policies in public pharmaceutical spending in the

EU / European Commission. URL: https://ec.europa.eu/economy_finance/publications/economic_paper/2012/pdf/ecp_461_en.pdf (Date of access: 02.04.2026).

29. WHO and Morocco sign Country Cooperation Strategy for 2017–2021. URL: <https://www.emro.who.int/fr/mor/information-resources/launch-and-signature-of-the-cooperation-strategy-between-who-and-morocco-for-the-period-2017-2021.html> (Date of access: 02.04.2026).

30. Decree № 2-13-852. *Official Bulletin*. 2013. № 6214, 15 Safar 1435. P. 2732. URL: <https://www.sante.gov.ma/Reglementation/TARIFICATION/2-13-852.pdf> (Date of access: 02.04.2026).

31. Louardi H. Health Sector Development Plan. Rabat, 2012.

32. EU Council Directive № 65/65/EC. On convergence of legislative provisions, rules and administrative measures in relation to medicinal products. URL: <https://eur-lex.europa.eu/eli/dir/1965/65/oj/eng> (Date of access: 02.04.2026).

33. Legal regulation European Environment Information and Observation Network. URL: <http://www.eionet.europa.eu/gemet/concept/4743> (Date of access: 02.04.2026).

34. European Programme of Work 2020–2025: United Action for Better Health. Copenhagen : WHO Regional Office for Europe, 2021. URL: <https://apps.who.int/iris/handle/10665/339209> (Date of access: 02.04.2026).

35. Loi № 17-04 portant code du médicament et de la pharmacie (promulguée par Dahir № 1-06-151 du 30 chaoual 1427 (22 novembre 2006)), Maroc. URL: <https://www.wipo.int/wipolex/fr/legislation/details/13793> (Date of access: 02.04.2026).

36. Nomenclature nationale des médicaments et des dispositifs médicaux essentiels. Ministre de la Santé, Maroc, 2020. URL: [https://cdn.who.int/media/docs/default-source/essential-medicines/national-essential-medicines-lists-\(neml\)/emro_neml/morocco_neml_2019.pdf?sfvrsn=c403bf64_1&download=true](https://cdn.who.int/media/docs/default-source/essential-medicines/national-essential-medicines-lists-(neml)/emro_neml/morocco_neml_2019.pdf?sfvrsn=c403bf64_1&download=true) (Date of access: 02.04.2026).

37. Brudon-Jakobowicz P., Rainhorn J. D., Reich M. R. Indicators for

monitoring national drug policies, a practical manual. 2nd ed. Geneva : World Health Organization, 1999. URL: <https://iris.who.int/server/api/core/bitstreams/d82eaa47-1e5a-4b09-a3a2-ed159c3ed8e1/content> (Date of access: 02.04.2026).

38. Note on guidelines and tools for the evaluation of national drug policy. *EUDA*. 2017. URL: https://www.euda.europa.eu/document-library/note-guidelines-and-tools-evaluation-national-drug-policy-emcdda-scientific-committee_en (Date of access: 02.04.2026).

National University of Pharmacy

Pharmaceutical faculty
Department of social pharmacy
Level of higher education master's
Specialty 226 Pharmacy, industrial pharmacy
Educational and professional program Pharmacy

APPROVED
The Head of Department
of Social Pharmacy

Alina VOLKOVA
“05” of September 2025

ASSIGNMENT FOR QUALIFICATION WORK OF AN APPLICANT FOR HIGHER EDUCATION

Nada El HAJJAMI

1. Topic of qualification work: «Research on the harmonization of national drug policies with European standards», supervisor of qualification work: Alla KOTVITSKA, Doctor of Pharmacy, professor, approved by order of NUPh from “06” of October 2025 № 266
2. Deadline for submission of qualification work by the applicant for higher education: May 2026 year.
3. Outgoing data for qualification work: authors' publications; media publications; official health sites; State Statistics Service of the world; sites of WHO, IFD, Internet, etc.
4. Contents of the settlement and explanatory note (list of questions that need to be developed): analyze the theoretical foundations of the functioning and regulation of the National Drug Policy; examine the selection of essential medicines at the country level; evaluate Morocco's national drug policy using WHO indicators.
5. List of graphic material (with exact indication of the required drawings):
Tables – 6, schemes – 13.

6. Consultants of chapters of qualification work

Chapters	Name, SURNAME, position of consultant	Signature, date	
		assignment was issued	assignment was received
1	Alla KOTVITSKA, professor of higher education institution of department of Social Pharmacy	11.09.25	11.09.25
2	Alla KOTVITSKA, professor of higher education institution of department of Social Pharmacy	21.11.25	21.11.25
3	Alla KOTVITSKA, professor of higher education institution of department of Social Pharmacy	24.12.25	24.12.25

7. Date of issue of the assignment: «05» of September 2025 year.

CALENDAR PLAN

№ з/п	Name of stages of qualification work	Deadline for the stages of qualification work	Notes
1	Analysis of scientific, periodical literature on the topic of qualification work	September 2025	done
2	To analyze the theoretical foundations of the functioning and regulation of the National Drug Policy	October – November 2025	done
3	To investigate key aspects of the organization of pharmaceutical policy in European countries in modern conditions	December – January 2025 – 2026	done
4	To study the level of implementation of drug policies and assess the Moroccan National Development Plan using WHO indicators	February – March 2026	done
5	Registration of a qualification work according to the general requirements	April 2026	done
6	Preparation of the report and multimedia presentation in official protection of a master's thesis	May 2026	done

An applicant of higher education _____ Nada EL HAJJAMI

Supervisor of qualification work _____ Alla KOTVITSKA

ВИТЯГ З НАКАЗУ
По Національному фармацевтичному університету

«06» жовтня 2025 р.

№ 266
Фармацевтичний факультет

Затвердити теми кваліфікаційних робіт здобувачам вищої освіти 5 курсу 2025-2026 н. р., група Фм21(4,10д)англ-01, освітньо-професійна програма «Фармація», спеціальність «226 Фармація, промислова фармація», галузь знань «22 Охорона здоров'я», рівень вищої освіти другий (магістерський), денна форма здобуття освіти, термін навчання 4 роки 10 місяців, мова навчання англійська.

Прізвище, ім'я здобувача вищої освіти	Тема кваліфікаційної роботи (українською мовою)	Тема кваліфікаційної роботи (англійською мовою)	Керівник кваліфікаційної роботи	Рецензент кваліфікаційної роботи
Кафедра соціальної фармації				
Ель Хажжамі Нада	Дослідження щодо гармонізації національних лікарських політик з Європейськими стандартами	Research on the harmonization of national drug policies with European standards	проф. Котвіцька А. А.	проф. Малий В. В.

Підстава: подання декана фармацевтичного факультету доцента Олександра ГОНЧАРОВА

Ректор
Вірно. Секретар



ВИСНОВОК
експертної комісії про проведену експертизу
щодо академічного плагіату у кваліфікаційній роботі
здобувача вищої освіти
«11» квітня 2026 р. № 333569925

Проаналізувавши кваліфікаційну роботу здобувача вищої освіти Ель Хажжамі Нада, групи Фм21(4,10д)англ-01, спеціальності 226 Фармація, промислова фармація, освітньої програми «Фармація» очної (денної) форми здобуття освіти на тему: «Дослідження щодо гармонізації національних лікарських політик з Європейськими стандартами / Research on the harmonization of national drug policies with European standards», експертна комісія дійшла висновку, що робота, представлена до Екзаменаційної комісії для захисту, виконана самостійно і не містить елементів академічного плагіату (копіляції).

Заступник голови Комісії,
заступник директора інституту
в складі ЗВО ННІПФ,
доцент



Олена НОВОСЕЛ

REVIEW

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

Nada El HAJJAMI

on the topic: «**Research on the harmonization of national drug policies with European standards**»

Relevance of the topic. According to WHO recommendations, the National Drug Policy is a key tool that guarantees equal access to safe, effective and quality medicines for citizens. To monitor and evaluate the pharmaceutical sector, WHO offers a system of indicators that allow transforming general problems into specific data for decision-making. Today, the relevance of this issue lies in the reform of the pharmaceutical sector, which poses a strategic challenge for each country. An analysis of national drug policies in developing countries (including Morocco) based on WHO assessment indicators helps to identify practical tasks to promote pharmaceutical sector reform in specific areas.

Practical value of conclusions, recommendations and their validity. The practical value of the study lies in its comprehensive and evidence-based assessment of the National Health Policy in Morocco, which translates theoretical declarations into concrete data. The work identifies both strengths and critical gaps in the National Health Plan, in the objective availability of medicines, which directly affects patient safety. A clustering of WHO national policy assessment indicators was carried out and their adaptation to the Moroccan system of providing the population with medicines was carried out. According to the results of the assessment using the WHO methodology, several critical areas were identified in Morocco where monitoring or analysis is practically not carried out.

Assessment of work. The graduate student has demonstrated strong analytical skills and academic maturity throughout the research process. The work is logically structured, methodologically sound, and thoroughly referenced. It combines statistical analysis, policy review, and strategic evaluation, and offers innovative ideas for improving the role of pharmaceutical care in the National Health Policy. The author has demonstrated a clear understanding of the topic and has made a valuable contribution to the field of public health and pharmacy.

General conclusion and recommendations on admission to defend. In general, the qualification work of Nada El HAJJAMI on the topic: «Research on the harmonization of national drug policies with European standards» is performed at the proper level, meets the requirements of the "Regulations on the preparation and protection of qualification works at the National University of Pharmacy" and can be recommended for defense in the Examination commission.

Scientific supervisor _____ Professor Alla KOTVITSKA

REVIEW

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

Nada El HAJJAMI

on the topic: **«Research on the harmonization of national drug policies with
European standards»**

Relevance of the topic. The vast majority of countries are struggling to provide their populations with medicines. Many healthcare issues remain relevant, such as improving the efficiency of healthcare facilities, as well as ensuring the accessibility, effectiveness, safety, and rational use of medicines. To help address this problem, WHO recommends that countries develop and adopt a national-level document that sets out priority goals for medicine supply and the main ways to achieve them: a national medicine policy.

Theoretical level of work. The qualification work is a theoretical generalization and solution to a scientific problem that underlies the modern principles of the National Drug Policy and is of great importance for the implementation of this concept in all countries of the world.

Author's suggestions on the research topic. The work concludes that the use of WHO indicators is critical for understanding national drug policy and is usually based on the following arguments: objectivity and standardization; identification of gaps; evidence-based decisions; and monitoring progress.

Practical value of conclusions, recommendations and their validity. These studies have shown that implementing an NDP program helps optimize the use of healthcare budgets. At the same time, despite the obvious relevance of the problems investigated in this qualification's work, it is possible to note the insufficient coverage of this topic both in domestic science and in journalistic publications. Thus, the research direction of Nada EL HAJJAMI's work is relevant and has practical significance.

Disadvantages of work. Some minor stylistic inconsistencies and occasional language issues are present, but they do not significantly affect the overall quality or comprehension of the research.

General conclusion and assessment of the work. According to the relevance and the results of the research qualification work of Nada El HAJJAMI on the topic: «Research on the harmonization of national drug policies with european standards» meets the requirements for master's works and can be recommended for official defense in the Examination commission.

Reviewer

Professor Volodymyr MALYI

«12» of May 2026

ВИТЯГ

з протоколу засідання кафедри соціальної фармації

№ 15 від «13» травня 2026 року

ПРИСУТНІ: зав. каф. проф. Волкова А. В., доц. Болдарь Г. Є., доц. Дядюн Т. В., проф. Котвіцька А. А., проф. Назаркіна В. М., доц. Ноздріна А. А., проф. Панфілова Г. Л., доц. Сурікова І. О., доц. Терещенко Л. В.

ПОРЯДОК ДЕННИЙ: Про представлення до захисту в Екзаменаційній комісії кваліфікаційних робіт.

СЛУХАЛИ: завідувачку кафедри доц. Волкову А. В. з рекомендацією представити до захисту в Екзаменаційній комісії кваліфікаційну роботу здобувача вищої освіти спеціальності 226 Фармація, промислова фармація Ель Хажжамі Нада на тему: «Дослідження щодо гармонізації національних лікарських політик з Європейськими стандартами».

Науковий керівник: д. фарм. н., професор ЗВО кафедри СФ Котвіцька А. А.

Рецензент: д. фарм. н., професор, завідувач кафедри ММЗЯФ Малий В. В.

ВИСТУПИЛИ: проф. Волкова А.В., проф. Назаркіна В.М., проф. Панфілова Г.Л. висловили рекомендації до кваліфікаційної роботи Ель Хажжамі Нада.

УХВАЛИЛИ: Рекомендувати до захисту в Екзаменаційній комісії кваліфікаційну роботу здобувача вищої освіти Ель Хажжамі Нада на тему: «Дослідження щодо гармонізації національних лікарських політик з Європейськими стандартами».

Завідувачка каф. СФ, доцент _____

Аліна ВОЛКОВА

Секретар, доцент _____

Альміра НОЗДРІНА

НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ

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

Направляється здобувачка вищої освіти Ель Хажжамі Нада до захисту кваліфікаційної роботи за галуззю знань 22 Охорона здоров'я спеціальністю 226 Фармація, промислова фармація освітньо-професійною програмою Фармація на тему: «Research on the harmonization of national drug policies with European standards».

Кваліфікаційна робота і рецензія додаються.

Декан факультету _____ / Олександр Гончаров /

Висновок керівника кваліфікаційної роботи

Здобувачка вищої освіти Ель Хажжамі Нада під час виконання кваліфікаційної роботи продемонструвала вміння працювати з науковими даними, проводити їх узагальнення, аналізувати та узагальнювати результати дослідження. Усі поставлені завдання відповідно до мети роботи було виконано у повному обсязі. Результати дослідження належним чином оброблені і представлені.

Таким чином, кваліфікаційна робота може бути рекомендована до офіційного захисту в Екзаменаційній комісії Національного фармацевтичного університету.

Керівник кваліфікаційної роботи _____ Алла КОТВИЦЬКА

«11» травня 2026 р.

Висновок кафедри про кваліфікаційну роботу

Кваліфікаційну роботу розглянуто. Здобувачка вищої освіти Ель Хажжамі Нада допускається до захисту даної кваліфікаційної роботи в Екзаменаційній комісії.

Завідувачка кафедри
соціальної фармації _____ Аліна ВОЛКОВА

«13» травня 2026 р.

Qualification work was defended

of Examination commission on

« 09 » __ June __ 2026 year

With the grade _____

Head of the State Examination commission,

DPharmSc, Professor

_____ / Volodymyr YAKOVENKO /