

Такі заходи дозволили значно зменшити обсяг продажу і споживання антибіотиків при лікуванні гострих респіраторних інфекцій.

Медичний університет Замбії переглянув навчальну програму для студентів, включивши до неї теми щодо стійкості збудників до протимікробних ЛЗ та раціонального застосування ліків. Метою таких заходів визначено підвищення якості підготовки випускників університету з подальшим здійснення ними клінічної практики на основі отриманих знань та адекватного призначення протимікробної терапії пацієнтам.

Аналіз міжнародного досвіду боротьби з розвитком антибіотикорезистентності у країнах світах підкреслює комплексність даної проблеми. Відомим фактом є те, що причинами резистентності мікробів є не тільки нераціональне споживання антимікробних ЛЗ населенням під час лікування, а й несвідоме споживання даної групи речовин з продуктами харчування і питною водою, що є наслідком розвитку хімічної промисловості та використанням антибіотиків у сільському господарстві. Даний факт підтверджує досвід Норвегії, де запроваджено проведення вакцинування штучно вирощуваної риби, що з часом дозволило зменшити кількість протимікробних препаратів, що застосовуються для її лікування під час вирощування, на 98% .

**Висновки.** Таким чином, за результатами проведеного аналізу можна стверджувати, що проблемою поширення антибіотикорезистентності занепокоєні у багатьох країнах світу. За таких умов головна задача урядів, вчених, медичних і фармацевтичних працівників – мати високий рівень поінформованості про дію та наслідки нераціонального використання антимікробних ЛЗ, тому що усі зазначені заходи матимуть успіх за умови слідування встановленим правилам раціонального призначення лікарями, розумного застосування населенням, а також відповідального використання антибіотиків у сільському господарстві.

## ANALYSIS OF THE STRATEGIC DIRECTIONS OF DEVELOPMENT OF THE HEALTHCARE SYSTEM AND PHARMACEUTICAL SECTOR OF THE KINGDOM OF MOROCCO

Ahmad Kawtar

Scientific supervisor: Tereshchenko L. V.

National University of Pharmacy, Kharkiv, Ukraine

socpharm@nuph.edu.ua

**Introduction.** The Kingdom of Morocco (KM) has great potential for the development of the health care system in general and the pharmaceutical sector in particular, but shortcomings in some aspects of the pharmaceutical regulatory system create obstacles to market access. Regulatory authorities in the region are involved in reforming coordinate processes to ensure faster access to the market for essential and innovative medicines. Achieving universal health coverage, which is in line with the United Nations Sustainable Development Goals, is at the heart of Morocco's 2011 constitutional reforms and World Health Organization's strategic plan for Morocco. The fundamental point in this is the provision of safe and high-quality medicines.

**Aim.** Analysis of the experience of reforming the health care system and the pharmaceutical sector in the KM to introduce socially oriented and economically viable models of providing appropriate services to the population.

**Materials and methods.** The materials used for the analysis are the regulations governing the health care system and the rules of pharmaceutical activity in Morocco, the WHO website. Historical, comparative and other methods of theoretical research were used during the research.

**Results and discussion.** The Moroccan government has identified the development of a health care system to improve the health of the population and improve the living standards of its citizens. The pharmaceutical sector plays a vital social role in providing people with medicines, and is one of the key elements in ensuring the effective functioning of the health system. Morocco's health sector is controlled by the Ministry of Health (MoH), which manages the kingdom's public hospitals and other public health infrastructure. MoH is also responsible for the implementation of health policy. Sector development is guided by the government's four-year strategic plans, the most recent of which is the Health Sector Strategy 2017–2021. The objectives of the plan include improving basic hospital resources; expanding health insurance to include those who are self-employed or in the humanities; a decrease in the incidence of cardiovascular diseases and hepatitis C; an increase in the number of employees in the health sector; standardizing the type of education that Moroccan medical students receive; and lower prices for medicines. In April 2018, the Council of Ministers approved the overall goals for a version of the strategy known as Santé (Health) 2025.

The plan is based on three main pillars: organizational initiatives to expand affordable health care and improve access through measures such as expanding the network of public hospitals and developing mobile health services in rural areas; strengthening national health programs and disease-specific campaigns, including an emphasis on consolidating existing maternal and child care programs; and improvements in the management and allocation of resources in the sector, including efforts to address what the government describes as a shortage of human resources in the sector. The Moroccan guidelines are largely based on those of the WHO, the International Council for the Harmonization of Technical Requirements for Pharmaceutical Products for Human Use and the European Union; however, on the ground, there is still a significant need for harmonization of scientific requirements in order to simplify the day-to-day work of industry and administration. New drug registration pathways are being developed as part of a worldwide effort to accelerate patient registration and access to new drugs, especially in areas with high unmet medical needs. In Morocco, Decree No. 2-14-841 on the Authorization for the Sale of Medicinal Products for Human Use, which came into force in February 2016, has made significant improvements to the registration process. Important examples include the implementation of the “recvabilité” phase, which allows applicants to respond to the full dossier within 60 days, and once approved, clear timelines are announced for the assessment / analysis phases, which are now being carried out in parallel with the accelerated processes. The administration seeks to issue a marketing authorization for a reference product or biosimilar product within 10 months, and for a generic product within nine months. The country is inspired by neighbors in the Middle East who have already taken a step forward by relying on approvals in regions or countries with tough regulatory agencies (such as the European Medicines Agency or the United States Food and Drug Administration).

**Conclusions.** Summing up the results of the research, it can be argued that the introduction of a set of measures to reform the health care and pharmaceutical sector in the KM indicates that public

health is a priority in state planning. In the long term, however, continued investment will be required to achieve the goal of universal health coverage.

## ANALYSIS OF EPIDEMIOLOGICAL PARAMETERS IN MOROCCO

Azza Yousra, Kurylenko Yu. Ye.

Scientific supervisor: Nemchenko A. S.

National University of Pharmacy, Kharkiv, Ukraine

economica@ukr.net

**Introduction.** The healthcare industry in Morocco is constantly evolving. Despite the problems in financing the healthcare industry, providing the population with medical and pharmaceutical care is the main priority of the state. The events of 2019, namely the coronavirus pandemic, have made their own adjustments to the organization of the process of providing pharmaceutical care. For this reason, the analysis of the epidemiological indicators of the population of Morocco becomes relevant.

**Aim** of the research is to analyze the indicators of population growth; deaths from the most common diseases in Morocco.

**Materials and methods.** The research used materials from open databases of statistical information (WHO, Statistics, Moroccan Innovation and Health). Methods - information generalization, analytical.

**Results and discussion.** Statistics on population growth in Morocco from 2010 to 2020 showed that growth increased on average over the study period by 1.7% over the previous year. The largest growth was noted in the period from 2012 to 2013 - 1.43%, and the smallest in 2018-2019 - 1.2%, respectively. At the same time, in 2019, the dynamics of population growth is declining, this may be caused by the cause of the pandemic and partial quarantine restrictions.

It is also worth noting that "the crude birth rate, which indicates the number of births occurring during the year, per 1000 people of the population" in 2019 was 18.5 per 1000 inhabitants. It should be noted that the highest coefficient was in 2010-2011 - 21, 21, respectively.

An analysis of the mortality rate of the Moroccan population aged 15 to 60 showed that in 2019 the female mortality rate was 60.94 per 1000 adult women, while the male mortality rate was 71.06 per 1000 adult men. On average, in 2019, there were about 7.06 deaths per 1000 inhabitants, both female and male.

At the same time, the average life expectancy in 2019 was 76.68 years, which is 2.68 times higher than in 2009.

**Conclusions.** Epidemiological parameters in Morocco remain unstable, which requires additional research.