

# Nepp from the Pharmacy Council of Saudi: Revolutionizing Pharmaceutical Care in Saudi

Nailah Mahdi Muteb Alqahtani<sup>1\*</sup>, Hessah Dawod Sulaiman Almusallam<sup>2</sup>, Seham Obaid Saleh Bin Ganzal<sup>3</sup>, Wasmiah Salman Ali Alquraini<sup>4</sup>, Maha Saad Mohammed Albanyan<sup>5</sup>

<sup>1,2,3,4,5</sup> Pharmacist, Prince Sultan Military Medical City, Riyadh, KSA

**Abstract - The goal of this article is to provide more context for the work being done by the National Electronic Pharmacy Platform (NEPP) to increase awareness of and access to virtual drugstores in Saudi Arabia. A quantitative cross-sectional analysis was conducted using data from 80 of the 220 online pharmacies registered with the NEPP. A comprehensive statistical profile of evolving patterns of pharmaceutical usage in Saudi Arabia was compiled using numerical analysis of the data. Even if NEPP didn't become widely available until 2023, there's certainly growing interest among pharmacists. There is a great deal of space for growth, and maintaining efforts to spread awareness and educate people is essential to its continuation. The relevance of the NEPP model for the different African countries is highlighted by the rising interest in pharmacy regulation and the growth of online drugstores. The potential future effects of NEPP on Saudi Arabia's healthcare system are highlighted by this study. An significant result is the rising prevalence of prescriptions for antibacterial medicines. This might indicate a rise in bacterial infections, particularly those affecting respiratory function, among the Saudi populace. Treating these infections and increasing understanding of antibacterial-related diseases are also vital. Our results may be useful to the Ministry of Health, the Saudi Health Service, and the Pharmacy Council as they develop plans to address health problems caused by antibiotic resistance.**

**Keywords - Pharmacy Council, Health Service, Saudi, NEPP, Global Health, Pharmaceuticals.**

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## INTRODUCTION

Patients are at the focus of the pharmacist's work under the "pharmaceutical care" idea. This suggests a mode of practice in which pharmacists take personal responsibility for ensuring that all actions are taken with the patient's best interests in mind. This idea is based on a phrase that was first described as a branch of medicine.[1] The idea evolved later on in response to changes in the community and the pharmacy's needs. This incorporates the services necessary for safe and successful treatment with the requisite medications for a specific patient. [2,3] According to this widely acknowledged practice, a pharmacist's primary responsibility is to provide pharmacological treatment in order to accomplish predetermined therapeutic objectives that improve patients' health and quality of life. In addition to the typical duties of a pharmacist—the manufacture, dispensing, and sale of medications—this model of care also requires pharmacists to take on the duty of enhancing the health and well-being of their patients.[4] Since then, pharmacists have pushed for improved methods of dispensing medication. There are several instances of such procedures in the published literature, all of which point to an improvement in results associated with the involvement of a pharmacist in the examination of a patient's medication treatment

regimen.[5,6] Pharmaceutical care, which entails the detection, prevention, and solution of drug-related problems, has been shown to be effective in treating diseases like asthma and cancer,[7,8] However, this type of care is not limited to these conditions; rather, it can be expanded to include patients of any age, gender, race, and socioeconomic status who are undergoing treatment with any drug. This is due to the fact that most patients have several treatment regimens administered to them, and a research by Perkin et al. found that complicated drug regimens are often related with noncompliance, particularly after hospital release. [9] Found that pharmacists may be able to solve this issue by encouraging patients' compliance and, in turn, improving treatment outcomes through patient engagement in pharmaceutical care activities like monitoring, counseling, problem-solving with drugs, and facilitating communication with the doctor.[10]

Although pharmaceutical care's primary goal was to resolve issues with medications, it also aided in accomplishing desirable clinical results and enhancing the patient's health-related quality of life within affordable means. Medication mistakes raise the overall price of medical treatment, cause patients to spend more time in emergency rooms, nursing homes, and in doctors' offices, and pose serious

health concerns. Pharmacists must use the concept of pharmaceutical care by collaborating with patients and other healthcare providers to develop, execute, and monitor a treatment plan to achieve desired clinical, economic, and human results.

### Objectives of NEPP

The primary goals of NEPP are to increase healthcare efficiency, provide access to necessary medications, and protect patients. Prescription mistakes, medication interactions, and dosing inconsistencies are reduced as a first priority. NEPP's goal is to make it easier for patients to get the pharmaceuticals they need by standardizing and simplifying the prescription procedure. In addition, NEPP works to lessen doctors' and hospitals' administrative loads so they may devote more resources to direct patient care. [11]

### Key Features of NEPP

The potential of NEPP can only be grasped in its entirety by looking closely at its defining characteristics. This system eliminates the potential for prescriptions to be misplaced or altered by switching to electronic records instead of paper ones. By connecting doctors and pharmacists in real time, NEPP speeds up the process of checking prescriptions and stock levels. A patient's electronic health records may be merged with it for a more complete picture of the patient's health and drug requirements. [12]

### Implications for Healthcare Delivery

The effects of implementing NEPP on healthcare provision in Saudi Arabia are far-reaching. It aids the expansion of telehealth by facilitating the use of electronic prescriptions after online doctor visits. Medication mistakes are far less likely to occur as a result of the shift from paper prescriptions to computerized ones. Furthermore, NEPP allows healthcare practitioners to track prescription trends, resulting in better chronic disease management.[13]

The introduction of the NEPP in Saudi Arabia is a major advancement toward the digitalization of pharmacological therapy throughout Africa. When it comes to expanding access to pharmaceutical services, promoting health equity, and enhancing health outcomes, NEPP is a first in the area. The long-term success and scalability of NEPP depend on improved regulatory frameworks, capacity-building activities, and complementing public-private partnerships. Partnership between key entities such as the Pharmacy Council, the Ministry of Health, the office of the Vice President of the Republic of Saudi Arabia, the Pharmaceutical Society of Saudi Arabia, the Food and Drugs Authority, the National Health Insurance Authority, the Saudi Health Service, and other vested stakeholders provides a compelling example of multi-sector coordination and

stakeholder involvement. Partnerships are crucial to the development and implementation of NEPP, and this collaborative endeavor is a shining example of their value. [14]

Member states are strongly encouraged to adopt and modify the NEPP model, as was emphasized during the Dakar Regional Assembly on Pharmacy Practice Regulation and Electronic Pharmacy. It's intended that this change would improve healthcare systems, reduce healthcare costs, and ultimately lead to Universal Health Coverage throughout the continent of Africa. There are now 220 online pharmacies in the NEPP network. Integration with all Saudi Private Health Insurance Companies is a remarkable achievement. The integration with the Lightwave electronic medical record system used by the Saudi Health Service has advanced significantly and is now 90% complete. Remarkably, we are also 90% down the route of integration with the National Health Insurance Authority. The second article will include in-depth research of the prevalence of NEPP among Saudi citizens and the dispersion of virtual drugstores around the kingdom. Insights into the transformative power of NEPP and its enduring impact on the US healthcare system will be provided.

### METHODOLOGY

A quantitative, cross-sectional analysis of sales data from 80 different NEPP online pharmacies. For this statistical analysis, we used data from 80 different NEPP-registered pharmacies offering ePharmacy services. As a result, we left out 142 more pharmacies while doing our analysis. Between February 2023 and July 2023, data were collected from ten distinct areas in Saudi Arabia. The Council only has jurisdiction over ten of Saudi Arabia's sixteen regions. The council made the decision to establish the zones in order to better manage the increasing territories.

**Table 1: Geographical distribution and concentration of online pharmacies**

| Region                                      | Greater Accra | Ashanti Region | Western Zone | Eastern Region | Northern Zone | Central Region | Brong Ahafo Zone | Volta Zone | Upper West | Upper East | TOTAL |
|---|---------------|----------------|--------------|----------------|---------------|----------------|------------------|------------|------------|------------|-------|
| No. registered for Private Health Insurance | 86            | 13             | 10           | 2              | 2             | 1              | 4                | 1          | -          | -          | 119   |
| No. of licensed e-Pharmacies                | 156           | 38             | 11           | 5              | 3             | 5              | 4                | 1          | -          | 1          | 224   |
| Number providing services                   | 91            | 15             | 10           | 2              | 2             | 1              | 4                | 1          | -          | -          | 126   |

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| NEPP as of July 2023 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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The majority of the research's contribution was quantitative in nature. The data was statistically evaluated to give a comprehensive and detailed statistical picture of the present drug usage trends in Saudi Arabia. Both cash and insurance-covered prescription drug purchases dominated NEPP's volume of business. NEPP cash transactions are excluded from the analyses presented in this study. The value of the 8 prescription counts over the study period was only 471 cedis 35 pesewas, thus we decided to exclude them because of their lack of statistical significance.

### RESULTS

Table 1 provides data for NEPP service providers, private health insurance users, and licensed online pharmacies as of July 2023. According to the data in the table below, "the total number of licensed ePharmacies increased to 224 after NEPP implementation in February 2023." This is especially impressive given that the website didn't even go live until July of 2022. Not all regions follow this trend, however, so keep that in mind.

Most ePharmacies can be found in Greater Accra, whereas no firms in Upper West have signed up to utilize the service. Each of the six administrative regions of Ghana (Brong Ahafo, Northern, Eastern, Central, and Volta) and the administrative region of Upper East have less than ten online pharmacies. Although the lower count of ePharmacies in northern regions may be attributed to infrastructural restrictions and lower digital literacy rates, the fact that the Eastern Region and the Central Region have reported a much lower number of ePharmacies is reason for concern. This study highlights the necessity for a robust awareness campaign in these locations.

As of July 2023, only around half of the ePharmacies that had registered were really utilizing the platform to deliver services and had joined up with Private Health Insurance in Saudi Arabia. Although there are several licensed ePharmacies in Accra, the city's percentage of the national total is much lower than that of other regions. More work has to be done to raise people's knowledge of ePharmacies and their advantages, especially in places where their

presence is still limited. By taking this preventative measure, not only will the current gaps be filled, but the distribution of ePharmacies throughout Saudi Arabia will become more even, which will in turn increase support for NEPP.

Regarding private health insurance, it covers the time period of February 1, 2023, through July 30, 2023. From February to July, there is an upward trend in both the quantity and value of prescriptions. This promising trend suggests that private health insurance for prescriptions will continue to grow in 2023, raising all boats.

**Table 2: What Private Health Insurance Covers and How Much It Costs to Fill Prescriptions**

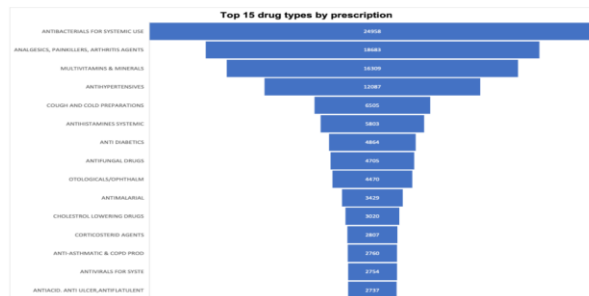
| Month                    | February     | March        | April        | May          | June         | July         | Total         |
|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Prescription count       | 25,387       | 25,789       | 28,628       | 22,494       | 26,199       | 26,773       | 1,54,270      |
| Prescription value (ghc) | 1,683,904.76 | 1,833,734.90 | 2,208,164.47 | 2,313,370.03 | 3,028,419.98 | 3,310,480.09 | 14,378,074.20 |

Only 78% of the 119 online pharmacies that take Private Health Insurance are really doing so. From February 2023 to July 2023, a staggering total of 64 different medication types were prescribed and delivered.

One hundred and fifty-four thousand two hundred and seventy (154,270) prescriptions were issued within the context of the sample communities, across sixty-four distinct medicine categories (drug types). Only 16.2% (n=24,958) of these prescriptions were for systemic antibacterials. The likelihood of contracting a respiratory infection is higher in those who use antibiotics often. [15] Antihypertensives came in at number four, just behind analgesics and multivitamins, and slightly ahead of cough and cold medicines at number five.

Drugs used to treat diabetes and malaria came in at number seven and number 10, respectively.

Although antibiotics and diabetes medications accounted for the bulk of healthcare expenditures, "antihypertensives emerged as the most financially important," making for 16% of the total. Patients who either don't take their medication as prescribed or use excessive doses contribute to the development and spread of antibiotic resistance." [16]



**Figure 1.** The top 15 drug classes for those with private health insurance.

**CONCLUSION**

The researchers in this study want to learn more about how the NEPP has been received and used by the general people in Saudi Arabia. We conducted a thorough analysis utilizing data we gathered from NEPP. Despite NEPP's late start date of 2023, the data demonstrate that pharmacies are showing increasing interest in the program. Growth is expected, and the prospects are bright because of increased training and education programs. Antibiotics and cough syrups are administered at a startlingly high rate. This trend may indicate a rise in the incidence of bacterial infections, especially respiratory ones. It is crucial to treat these infections and raise awareness of problems that may be related to antibacterials. In addition, if NEPP is effective in Saudi Arabia, it may inspire other countries to adopt similar programs, which would have a positive impact on health throughout the world.

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- Pharmacist, Prince Sultan Military Medical City, Riyadh, KSA

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#### Corresponding Author

**Nailah Mahdi Muteb Alqahtani\***