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Pharmacy Council Revolutionizing Pharmaceutical Care in Ghana: The National Electronic Pharmacy Platform (NEPP)

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ABSTRACT

Purpose

This article aims to highlight the distribution and growing acceptance of electronic pharmacies through the National Electronic Pharmacy Platform (NEPP) among Ghanaian citizens.

Methodology

A cross-sectional quantitative survey was conducted, analyzing transaction data from 84 out of the 226 electronic pharmacies registered with NEPP. The data was assessed numerically to present a detailed statistical overview of medication utilization trends in Ghana.

Findings

Even though NEPP was only introduced in 2023, there's evident growing interest among pharmacies. The growth potential is considerable, further amplified by ongoing awareness campaigns and training initiatives.

Research implications

The regulation of pharmacy practices and the growth of electronic pharmacies in Africa highlight the urgency for member countries to adopt and adapt to the NEPP model.

Practical implications

This study underscores the transformational capabilities of NEPP and its potential long-lasting effect on Ghana's healthcare framework.

Social Implications

A significant observation is the elevated prescription rate for antibacterial medications. This might indicate a surge in bacterial infections within the Ghanaian populace, particularly those tied to respiratory issues. Addressing these infections and heightening awareness about diseases related to antibacterials is essential.

Originality/value

Our results offer valuable insights for the Ministry of Health, the Ghana Health Service, and the Pharmacy Council as they strategize on addressing antibacterial-related health concerns.

Moreover, NEPP's success in Ghana may motivate other nations to adopt similar systems, aiming to enhance their healthcare provisions.

INTRODUCTION

The Pharmacy Council (PC) of Ghana operates under Parts IV & VI of the Health Professions Regulatory Bodies Act, 2013 (ACT 857) as a body corporate with perpetual succession.[1] It is governed by a nine (9) member Governing Board with the mandate of ensuring the highest standards in the practice of pharmacy in the country, all in the public interest. The mission of the Pharmacy Council is to secure the highest level of pharmaceutical care by ensuring that pharmaceutical care providers adhere to agreed standards and are accessible to the entire population. Additionally, the Council aims to collaborate with local agencies and international pharmaceutical organizations to enhance its effectiveness and contribute to rational medicine use in Ghana. The PC is committed to carrying out this mission with dedication, integrity, and professionalism.

The realm of digital healthcare is perpetually in flux, and in alignment with the mission of the Ministry of Health, the Pharmacy Council has meticulously crafted and introduced the NEPP to synchronize with this dynamic evolution of technological advancement. Through the adept utilization of digital avenues, the PC has broadened the horizons of healthcare provision, transcending the confines of conventional physical pharmacies. This extension has reached individuals dwelling in remote hinterlands, where access to healthcare was once an arduous endeavor. This all-encompassing approach ensures that each Ghanaian, irrespective of their geographical disposition, can access the pharmaceutical care that is rightfully theirs.

Background of NEPP

The introduction of the NEPP in Ghana represents a momentous leap in the digital transformation of pharmaceutical care throughout Africa. As a pioneering innovation within the region, NEPP is dedicated to amplifying access to high-quality pharmaceutical services, championing patient safety, and advancing health equity. The significance of fortified regulatory frameworks, capacity-building endeavors, and synergistic public-private collaborations in upholding the sustainability and expansibility of NEPP cannot be overstated. The orchestrated partnership between key entities, including the Pharmacy Council, the Ministry of Health, the office of the Vice President of the Republic of Ghana, the Pharmaceutical Society of Ghana, the Food and Drugs Authority, the National Health Insurance Authority, the Ghana Health Service and other vested stakeholders, exemplifies a compelling illustration of multi-sectoral coordination and stakeholder involvement. This collective endeavor underscores the pivotal role such collaborations play in the development and deployment of NEPP.

Notably, a regional assembly convened in Dakar, focusing on pharmacy practice regulation and electronic pharmacy, underscored the imperativeness for member countries to embrace and adapt the NEPP model. This adaptation is envisaged to catalyze a transformative impact on pharmaceutical care, bolster healthcare systems, and steer the course toward achieving Universal Health Coverage across the entirety of the African continent. At present, the NEPP ecosystem boasts an impressive count of 226 electronic pharmacies actively engaged. Noteworthy achievements include full integration with all Private Health Insurance Companies in Ghana. The integration journey with the National Health Insurance Authority stands at a commendable 90% completion, while alignment with the Ghana Health Service Lightwave electronic medical record system is substantially advanced, reaching 70% completion. In the forthcoming report, a comprehensive exploration will be undertaken to shed

[1] https://pcghana.org/

light on the spatial distribution of electronic pharmacies and the pervasive adoption of NEPP by the citizens of Ghana. This insightful exploration will unveil the transformative potential of NEPP and its enduring impact on the nation's healthcare landscape.

METHODOLOGY

A cross-sectional quantitative analysis of transaction data from 84 out of the 226 electronic pharmacies on NEPP. The sample size of 84 used for the analysis were pharmacies that have registered and offered ePharmacy services on NEPP. Consequently, the remaining E-Pharmacies (n=142) were excluded from the analysis. Data for this study was collected between January 2023 and June 2023 across 10 regions/zones in Ghana. While Ghana comprises 16 regions, the Council's operational scope is limited to ten regions/zones within the country. The zones were established by the council to cluster regions that underwent expansion, as detailed in Table 1.

The data used for the analysis was quantitative in nature. Hence, the analysis of the data was carried out numerically to construct a comprehensive and descriptive statistical representation of the prevailing medication utilization trends in Ghana. The transactions on NEPP primarily revolved around payments for medicines, encompassing both cash transactions and those conducted through insurance. In this study, cash transactions on NEPP were specifically excluded from the analysis. This decision was based on the fact that during the examined period, there were only 8 prescription counts with a cumulative value of four hundred and seventy-one cedis thirty-five pesewas, rendering them statistically insignificant within the context of the study.

RESULTS AND DISCUSSION

Table 1 provides a comprehensive breakdown of licensed ePharmacies, registrations for Private Health Insurance, and the total count of service providers on NEPP, as of June 2023. As illustrated in the table, the cumulative number of licensed ePharmacies has reached 226 following the rollout of NEPP in January 2023. This accomplishment is notably commendable considering the platform's recent launch in July 2022. However, it is important to note that this distribution is not uniform across all regions.

Predominantly, a significant majority of ePharmacies (N=156) are concentrated in the Greater Accra region, while regrettably, none have yet embraced the platform in the Upper West region. Additional regions/zones, specifically the Brong Ahafo Zone, Northern Zone, Eastern Region, Central Region, Volta Zone, and Upper East, have recorded less than ten ePharmacies each. While the lower count of ePharmacies in northern regions can be attributed to infrastructural limitations and lower digital literacy rates, the concerning aspect arises from the fact that both the Eastern Region and the Central Region have registered a comparatively lower number of ePharmacies. This observation underscores the urgency for an impactful awareness campaign in these regions.

Despite the registered count of ePharmacies, it's noteworthy that slightly over 50% of them are actively engaged in providing services on the platform and have also enrolled for Private Health Insurance in Ghana, as of June 2023. While a substantial number of ePharmacies are concentrated in Accra, the actual tally of those actively delivering services is comparatively lower when contrasted with the relatively modest number of licensed ePharmacies in other regions. There is a pressing need to focus concerted efforts on cultivating heightened awareness and championing the advantages of ePharmacies, particularly within regions where their current presence remains limited. This proactive stance will not only bridge existing gaps but also play a pivotal role in cultivating a more balanced dissemination of ePharmacies, thereby fostering a more inclusive and widespread adoption of NEPP throughout the entirety of Ghana.

Table 1. Regional distribution of electronic pharmacies and their operational status

Region	No. of licensed ePharmacies	No. registered for Private Health Insurance	Number providing services on NEPP as of June 2023
Greater Accra	156	87	91
Ashanti Region	38	13	15
Western Zone	11	10	10
Brong Ahafo Zone	5	4	4
Eastern Region	5	2	2
Northern Zone	3	2	2
Central Region	6	1	1
Volta Zone	1	1	1
Upper West	-	-	-
Upper East	1	-	-
TOTAL	**226**	**120**	**126**

Table 2 provides a concise overview of the prescription count and corresponding value associated with private health insurance, spanning from January to June 2023. Notably, both the prescription count and value exhibit an upward trajectory, steadily increasing from January through June. This observable trend signifies a positive advancement in the realm of private health insurance prescription utilization, underscoring a discernible improvement during the specified period in 2023.

Table 2. Summary of Private Health Insurance prescription count and value

MONTH	PRESCRIPTION COUNT	PRESCRIPTION VALUE (Ghc)
JANUARY	24,387	1,683,904.76
FEBRUARY	25,789	1,833,734.90
MARCH	28,628	2,208,164.47
APRIL	22,494	2,313,370.03
MAY	26,199	3,028,419.98
JUNE	26,773	3,310,480.09
TOTAL	**154,270**	**14,378,074.20**

A comprehensive tally reveals a total of 78 out of 120 electronic pharmacies engaging in Private Health Insurance services. Remarkably, the cumulative count of distinct medicine categories (Drug types) dispensed throughout the period spanning from January to June 2023 was 64.

Within the context of the sample communities, a total of sixty-four distinct medicine categories (drug types) were dispensed, amounting to a substantial one hundred and fifty-four thousand two hundred and seventy (154,270) prescriptions. Among these prescriptions, 16.2% (n=24,958) were attributed to antibacterials intended for systemic use. The frequency of antibacterial usage could potentially indicate the presence of respiratory tract infections (Lanyero H et al., 2020). Interestingly, antihypertensives secured the fourth position in prescription frequency, trailing behind analgesics and multivitamins, while cough and cold preparations followed as the fifth most frequently prescribed.

Similarly, antidiabetic and antimalarial medications claimed the seventh and tenth positions, respectively. However, in terms of monetary expenditure, antihypertensives emerged as the most financially significant, constituting 16% of the total cost, with antibacterials and antidiabetics following suit in the subsequent ranks. However, patients who abuse or use antibiotics excessively and inappropriately contribute to the development and spread of antibiotic resistance (Labi et al., 2018).

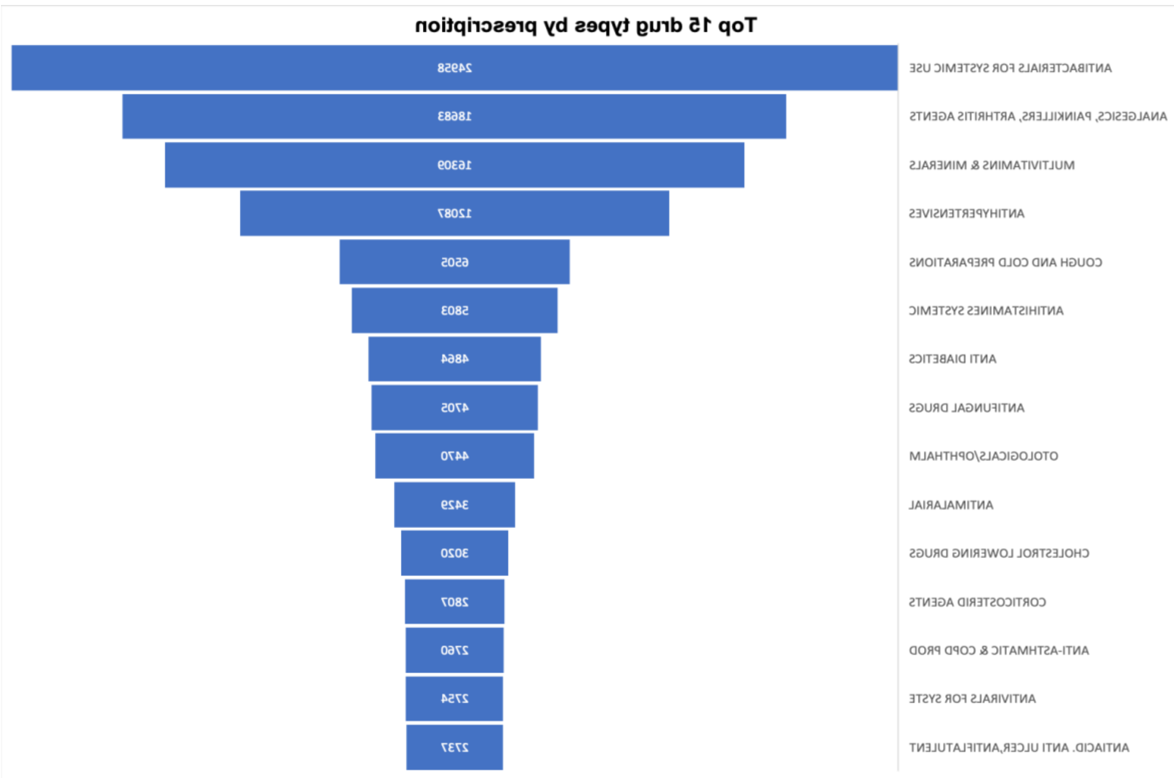

Figure 1. Ranking of the top 15 medicine categories prescribed under Private Health Insurance

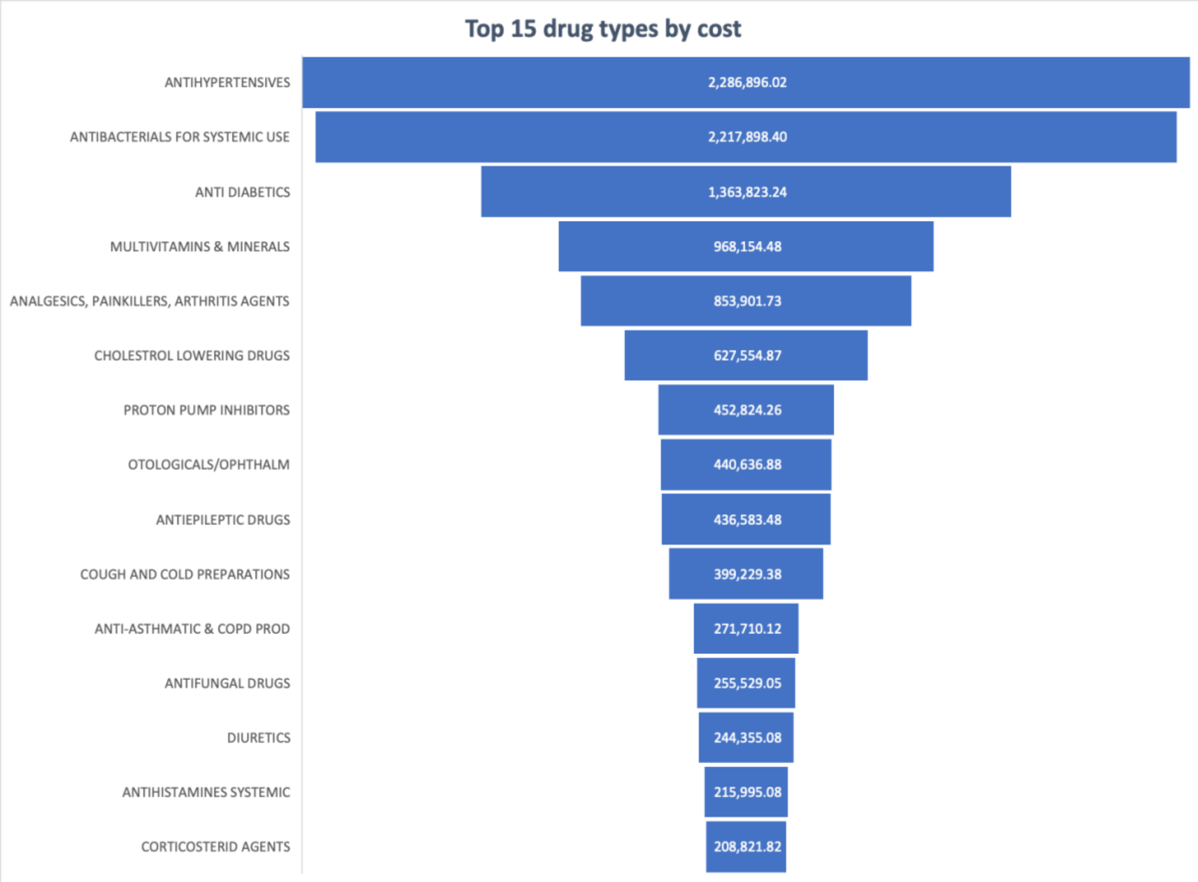

Figure 2. Cost analysis of the top 15 medicine categories dispensed under Private Health Insurance

CONCLUSION AND RECOMMENDATION

This research examines how the NEPP is used and adopted within Ghana's public health system. Using data taken directly from NEPP, we conducted a detailed analysis to derive key insights. Despite NEPP being newly introduced in 2023, the findings suggest a growing interest among pharmacies. This potential growth is promising, especially with increased awareness campaigns and training programs.

A notable trend identified is the high prescription rate of antibacterial medications and cough preparations. This suggests a possible rise in bacterial infections, especially those linked to the respiratory tract, within the population. Addressing these infections and promoting awareness about diseases associated with antibacterials is crucial.

We believe our findings can guide the Ministry of Health, the Ghana Health Service, the Food and Drugs Authority, and the Pharmacy Council in developing campaigns to combat antibacterial-related health challenges. Furthermore, the success of NEPP in Ghana could inspire other countries to adopt similar platforms to elevate their healthcare standards.

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