Local Government Financing and Essential Medicine for Primary Health Centres in Zamfara State

Luke Ighodalo Okojie
Department of Public Administration
Faculty of Administration
Ahmadu Bello University, Zaria
Email: lukeighodalo2191@gmail.com
Phone: 0703462696

Abstract
The high cost of unregulated low-quality essential drugs at various Primary Health Care Centres (PHCs), especially in the rural areas, is largely attributed to poor primary healthcare financing, with its attendant impact on maternal mortality rates and the provision of basic healthcare services for the already vulnerable population in dire need of healthcare. Therefore, this study empirically examined local government financing and essential medicines for PHCs in six selected LGAs of Zamfara State in 2024 to determine the extent to which funding affects the provision of essential medicines in PHC facilities. Due to its relevance, the Accountability framework for service delivery theory of local government was adopted. The study employed a single-method research approach to collect data from a systematically selected sample using 400 questionnaires. A simple linear regression statistical tool was used to test the null hypothesis. Findings revealed that local government healthcare financing has a positive effect on the provision of essential drugs for PHCs in the study area. Therefore, the study recommends improved Local Government healthcare financing to enhance adequate provision and availability of basic medication for effective healthcare delivery in Gusau, Maru, Kaura-Namoda, Bukkuyum, Maradun, and Zurmi LGAs of Zamfara State.

Keywords: Local government financing, primary health care, essential medicine.

Introduction

Empirical evidence indicates that more than 30% of the world's population, and 50% of Africa's population, lack equitable access to affordable life-saving and health-supporting essential medicines (Yenet & Nibret, 2023). This discovery contradicts the fundamental principle of the human right to healthcare, which includes unlimited access to essential medicines. According to the World Health Organisation (2023), essential medicines are drugs that meet the necessary healthcare needs of the people. They are selected and clinically produced based on public health relevance, with proven quality, efficacy, and safety, and should be affordable (due to sustainable funding interventions) and regularly available within a functioning healthcare system in adequate proportions, forms, and dosages for both individuals and communities. They are clinically and scientifically regulated, certified safe antidotes for diseases and ailments designed to save lives, improve health, and well-being. Therefore, their provision and sufficient availability constitute an inevitable component of primary health care delivery, which local governments' healthcare financing can be empirically examined (Mazhindu et al., 2025).

In developed countries, essential medicines for PHCs are substantially financed and allocated to facilities according to the type and level of care provided at each facility by a public

financing system under the national health insurance scheme, to guarantee availability and affordability (Igbokwe et al., 2024).

Unfortunately, approximately 60% of Nigeria's population lacks access to essential drugs (which are largely imported) due to insufficient public health financing. This leads to challenges in affordability, availability, and supply chain (Ololade et al., 2025). To address the situation, essential medicines financing for PHCs was constitutionally designated to the local governments, which largely depend on the state and federal governments for funding (Nwosu & Amobi, 2024; 1999 Constitution of the Federal Republic of Nigeria, as amended; NPHCDA, 2007). This scenario forced most LGAs in Zamfara State to rely on external interventions, mainly through the Zamfara State Drugs and Medical Consumables Management Agency (DMA) and UNICEF drug supply programs, to mitigate the challenge of essential medicines affordability and availability in the State, particularly in the study area. This was demonstrated in the recent distribution of free cholera drugs across the 14 LGAs by the state government. This is one of the barriers that hinder individuals and communities from accessing healthcare and necessary treatments for various health conditions, even during emergencies (The Nation, 2025; Eide et al., 2015).

Buttressing this view, the survey conducted by Fanda et al. (2024) revealed that inadequate, low-quality, and high-cost of essential drugs at most PHCs (most of which are not regulated by national pharmacy standards) deny the vulnerable population access and affordability of medication. As a result, some of the drugs expire, making them more dangerous to consume. In addition, the prevailing high level of insecurity, coupled with inadequate funding in Zamfara state, including the volatile communities in the study areas, prevents the regular supply of essential drugs to PHC facilities, thereby denying patients accessibility (Anurugwo et al., 2025). Another factor in this regard is the widespread poverty that denies individuals and households with health needs the ability to afford medications. Consequently, ailments are unattended, amidst worsened health conditions, ¾ of vulnerable rural women deliver outside health facilities without skilled medical personnel, and maternal mortality became unacceptably high, leading to the death of 712 women in 2023, while poor health outcomes persisted (PAHO/WHO, 2023).

In view of the above, this study examined the extent to which local government healthcare financing affects the supply of essential medicines for PHCs in Gusau, Maru, Bukkuyum, Maradun, Kaura-Namoda, and Zurmi LGAs of Zamfara State. To achieve this objective, a null hypothesis was formulated, thus:

H_0: Local Government healthcare funding does not affect the supply of essential medicines in Gusau, Maru, Kaura-Namoda, Bukkuyum, Maradun, and Zurmi Local Government Areas of Zamfara State

Therefore, the topic is discussed under the introduction, methodology, literature review, empirical review, data analysis, findings, and recommendations.

Empirical Review

Local Government Healthcare Financing

Generally, one of the major challenges of local governments in Nigeria is inadequate funding, as reflected in their meagre monthly allocations from the federation account, coupled with inadequate internally generated revenue (Pillah et al., 2025). Funding is the lubricant that drives the engine of Primary Health Care facilities to function. Its effects are what determine the capacity of government at any level to meet the health needs of the people by providing drugs/medication, payment of salaries/allowance of health care workers, provision of facilities, and subsidising the cost of treatment (Shan et al., 2024).

According to Setiawan et al. (2022), the ability to effectively plan, manage, provide resources, and deliver healthcare services to both individuals and communities seeking care is referred to as the local government's financial capacity to fund healthcare services. The capacity encompasses the availability of adequate financial resources, human resources, infrastructure, and the ability to collaborate with other stakeholders. It's essentially about whether the local governments have the wherewithal to mobilise sufficient resources and capabilities to meet the needs of their populace. As a critical aspect of public administration, local government finance is largely perceived as the lifeblood of the local governance structure, which entails generating resources through taxation, allocating and managing funds for public services like healthcare, as well as undertaking developmental responsibilities (Ajiteru, 2025). It's associated with the understanding that the proximity of local government to the people makes them better suited to promptly provide essential services, such as primary healthcare, to local needs, which are unfortunately constrained by inadequate funding (Lincoln et al., 2025).

Inadequate healthcare financing at the local government level can be attributed to budgetary limitations, lack of financial autonomy, dwindling economic fortunes amidst fiscal mismanagement, which has driven out-of-pocket payment for healthcare to a record high of about 76% in recent times, leading to poor health outcomes and numerous preventable deaths that could have been managed at PHC facilities (Josiah, et al., 2025). This discovery aligned with the position of Hanson, Kara et al. (2022), that generally, public health financing falls short of what is needed; for instance, the total primary healthcare investment of local governments in Nigeria is less than the 15% threshold recommended by African Heads of government at the Abuja declaration of 2001. It is also below the basic minimum benchmark of the amount required to provide a basic package of healthcare services, as exemplified in the study by Adebusola et al., (2025), that most Local Government Health Departments in Nigeria contribute 6% of their budgets to PHC financing including the procurement and provision of essential medicines, while out-of-pocket payment, mostly by low income earners contributes 69%, the federal ministry of health, 7%, state ministry of health, 5%, health maintenance organization, 4%, non-governmental organizations, 3% and national health insurance scheme, 2%. The former maintained that PHC financing is grossly inadequate, leading to inequitable access to poor standard healthcare services, with deteriorating health conditions that are heavily subsidised by patients through out-of-pocket payments, pushing the vulnerable population deeper into poverty.

Nwakamma et al. (2024) buttressed this view in their study on "Challenges of Local Government in the Provision of Primary Health Care Services in Ebonyi State, Nigeria." The survey relied on secondary sources of data, content, and narrative techniques to unravel and analyse the cause of inadequate PHC services to the people, mostly in the rural areas, which significantly increased infant and maternal mortality rates. The investigation discovered that the LGA-supervised PHCs in the study areas fell short of the National Primary Health Care Development Agency (NPHCDA) minimum standard for the provision of basic healthcare services, mainly due to inadequate healthcare financing largely orchestrated by paucity of local government funds and fiscal mismanagement. Therefore, the study recommends adequate funding of PHCs in line with international benchmarks. In addition, Ojiako & Raphael (2025) attributed the challenges confronting local government primary healthcare financing in Nigeria to the bureaucratic delay in releasing LGA funds from the state-local government joint account, lack of local government fiscal autonomy, lack of political will to fund healthcare, insufficient revenue, and poor budgetary allocation for primary healthcare. These barriers have significantly fueled out-of-pocket payments for healthcare services, making it almost beyond reach for the vulnerable population.

The investigations of Nwakamma et al. (2024) and Ojiaku & Raphael (2025) are relevant to this study because they identified and linked the challenges of local government healthcare financing to the poor provision of PHC services, of which essential medicine is an integral component. However, the studies could be queried for their narrow views, failing to establish sources of local government financing and evidence of LGA health budgets, hence the gap that this study seeks to address.

Essential Medicines for Primary Health Care

According to the WHO (2024), the concept of essential medicines connotes those that safely and effectively treat or meet the priority healthcare needs of the population. Public relevance, evidence of benefits and harms, affordability, and other relevant factors are taken into consideration when selecting essential medicines. A sufficient quantity of essential medicines of assured quality, at low cost, in appropriate dosage, should always be readily available within a functioning healthcare facility or system to meet patients' health needs. Although essential medicines cover various health needs, globally, they represent only a small proportion of the total number of medicines available (Chikophe, 2024). The use of a limited number of carefully selected medicines can lower costs, improve supply, and prescribing practices. Concerning cost, Ifijeh (2025) examined the effect of drug revolving fund performance on the affordability of essential medicines in Esan Southeast LGA PHC facilities. The study used both qualitative and quantitative approaches, in line with the WHO and Health Action International (WHO/HAI) method, to assess the cost of 27 common disease medications and 12 reproductive health drugs in 22 facilities. The results indicated that, on average, the least paid staff will require 34% of his/her daily pay for the treatment of malaria using artemisinin combination therapy (ACT). In contrast, quinine will require 50%. Most PHC facilities had poor Drug Revolving Fund (DRF) performance, while 1 out of 3 Comprehensive Health Centres (CHCs) had good DRF performance. Therefore, the study concluded that medicines for disease and reproductive health treatment were largely affordable due to the availability of external healthcare financing interventions, thereby significantly contributing to improving health and saving lives.

Sambo (2008) assessed the availability of essential medicines in Tafa LGA of Niger state, north central Nigeria, and the perception of patients in PHC facilities on the medicine situation. The study used the National Primary Health Care Development Agency (NPHCDA) checklist of minimum medicines expected in a generic PHC to assess essential medicines availability at the facilities. The study used Focus Group Discussion as a method of data collection to determine the perceptions of respondents on the situation at various PHCs in the study area. Findings revealed that the Bakamako Initiative (BI), which is aimed at improving access to essential medicines and the Drugs Revolving Fund (DRF) system, is not implemented in all the PHCs investigated in Tafa LGA of Niger State, making them fall below the NPHCDA standard. Similarly, the result also confirmed inadequate essential medicines and clients' dissatisfaction with the drug situation in most PHC facilities. The study observed that despite putting in place the Bamako Initiative, the availability of essential medicines in adequate proportion was still a mirage in most PHCs. Therefore, the study recommended more efforts aimed at repositioning PHC and reviving the Bamako initiative by ensuring a functional DRF system. The survey by Sambo is relevant because it investigated the provision and availability of essential medicines as one of the integral components of PHC, as advocated at the PHC Alma-Ata conference of 1978, while this study examines essential medicines as a variable to determine the funding capacity of local government-supervised PHCs to guarantee their continuous provision and availability in adequate proportion.

However, the study of Sambo could be flawed for not enumerating the national essential medicine list recommended for PHCs by the WHO, and also for not distinguishing the drugs available from those not available. Also, the dissatisfaction of clients was not stated whether it was on the efficacy, drug expiration, the effect of wrong diagnosis, or inadequate availability to ascertain the veracity of dissatisfaction. Therefore, the nexus between the above studies could be expressed as a cause-and-effect relationship because, while Nwakamma et al. (2024) and Ojiako & Rapheal (2025) identified the challenges limiting local government healthcare financing, Sambo fingered these challenges as the reason for inadequate availability of essential medicines at PHCs and clients' dissatisfaction.

Theoretical Framework

Accountability Framework for Service Delivery Theory of Local Government

The above model, also known as the "Accountability Triangle," focuses on the use of structured mechanisms such as transparency, oversight, and reporting to ensure that those responsible for public service delivery, e.g., funding healthcare services, are held accountable for their performance. The model was developed by the World Bank under the supervision of Shanta Devarajan and Ritva Reinikkato in 2004, to make services work for the poor, improve the effectiveness, fairness, and efficiency of public service delivery through adequate fund utilisation. The model also explains the nexus between levels of government with delegated authority to deliver essential services and the people, otherwise known as service recipients. It therefore becomes necessary and obligatory for public office holders who hold the people's authority in trust to be accountable to the citizens for their actions and performance. Proponents of the theory include several researchers and organisations that developed and applied the concept within the context of public and development administration. For example, the World Health Organisation (WHO, 2024) advocated that adequate funding, accountability, transparency, citizens' participation, and good governance are crucial variables that promote effective healthcare service delivery. The organisation emphasised that human resources, assets, financial, and information management frameworks are inevitable necessities in the operation and sustainability of healthcare delivery (Eccleston-Turner & McArdle, 2017). The contribution of the World Bank to the model emphasised the importance of funding and social accountability mechanisms, particularly the "short route," where citizens can monitor allocations and directly engage with service providers through the use of scorecards and the accountability triangle to promote service delivery transparency (Muwonge et al., & 2022).

The contribution of Jelenic (2019) focused on the efficacy of open government data and its impact on improving service delivery and accountability, while that of Aston (2022) emphasised that both social and former sanctions can contribute to improving service delivery outcomes across a variety of contexts in certain circumstances. It explored the relationship between effective social service delivery and accountability through motivation and service providers' awareness, availability of funds, quality infrastructure, etc.

The theory is relevant to this study because it emphasises the importance of accountability on local government healthcare financing for PHC drugs, especially as LGAs' performance evaluation, and accountability in the study area ranks 2.1% in the provision of essential medicine and worst in primary healthcare delivery (Jumare, 2022). The model also explains the ability and capacity of local government to appropriate and manage scarce financial resources to provide preventive, curative, and rehabilitative healthcare services, as well as respond to the health needs of the community by making medicines available. It also instils the consciousness of doing the right thing to enhance better performance in the provision of primary health drugs within the

LGAs' areas of study. The framework can help promote an understanding of local government primary healthcare funding, accountability, and performance evaluation, leading to improved healthcare service delivery to the people.

Importance of Essential Drugs Financing

Just as health is important to life, so is financing essential medicines important in promoting and sustaining a healthy life. Below are some of the importance of funding essential drugs for PHCs:

Help Achieve the UHC Objective and Enhance Equitable Access: Financing essential medicines is the fuel that lubricates and drives the PHC engine towards achieving the universal health coverage objective. Adequate availability of drugs for treatment helps guarantee access to healthcare for vulnerable populations without financial barriers.

Improve Health Outcome: Generally, local government healthcare spending on PHC is inadequate, leading to the inability of PHCs to meet the health needs of the people they serve; therefore, financing essential medicines will reduce mortality rates, improve the health condition of the people, increase life expectancy, enhance efficient healthcare services, and outcomes.

Strengthens Health Security: Funding essential medicines translates to people-centred policies that address inequality in primary healthcare delivery, prevent disease outbreaks from becoming epidemics

Build Trust in the Health System: The availability and affordability of essential medicines at PHCs build community trust in the health system, which enhances facility utilisation (Wang & Zahur, 2025).

The Challenge of Financing Essential Medicines for PHC and the Reason for Out-of-Pocket Payments (OOPs)

The inability of local governments to adequately finance essential medicines for PHC led to out-of-pocket payments (OOPs) for medicine, which have risen to 76% in Nigeria, driving about 70 million vulnerable people to extreme poverty (World Bank, 2022). As a result of the high cost of most essential medicines, some economically disadvantaged patients got into debt. Others are forced to sell off their assets and means of livelihood to buy drugs. In view of this, to continuously fund the supply of essential medicines for over 70 million people became a challenge to the local government. The dwindling macroeconomic fortunes of Nigeria have constrained the fiscal capacity of local governments to generate sufficient resources required to augment the huge cost of medications for a growing population with increasing health needs.

Local government revenue linkage and poor resource mobilisation, especially through tax drives, constitute an obstacle to adequately financing medicines for PHCs. Most LGAs lack the political will to reappropriate scarce resources from areas of lesser need to those of higher need to reflect prioritised equity in fund allocation across various sectors

Concerning out-of-pocket payments (OOPs), the inadequate availability and high cost of essential medicines in most PHCs are the major reasons for OOPs for drugs, which exact a substantial financial burden on vulnerable individuals, especially those with chronic health concerns that require continuous treatment (Aranmolate, 2025). Most of the expensive medications are not covered by health insurance, and the national health insurance has limited enrollees. Insecurity, especially in vulnerable rural communities, scares away the supply of essential medicines to the affected communities. Also, reports indicate that armed bandits even invade some health facilities and loot medications for patients. These contribute to drug scarcity and hike the prices.

Research Methodology

The study is restricted to the empirical assessment of local government financing of essential medicines for PHCs in six LGAs of Zamfara State because it is premised on one of the variables

for evaluating the SDGs "Good Health and Well-being" policy objectives, in line with local governments' healthcare funding obligation and capacity in the study area.

The scope of this survey is the six LGAs of Zamfara State, which represent systematically selected two urban and rural LGAs from each of the three senatorial zones between 2020 and 2024. The scope was narrowed down to these locations due to the accelerated wave of insecurity across the state. The rationale for said period accounts for Nigeria's substantial percentage of 28.3% global maternal deaths, with a ratio that ranged between 512-1047 deaths per 100,000 live births, with Zamfara State topping the list (UNICEF, 2025). Also, the timeline coincides with the removal of the subsidy for premium motor spirit by the federal government. The policy decision significantly improved revenue for the three tiers of government, especially the local government councils (Sanusi, 2024).

This is a single research design that adopts qualitative approaches to determine how the independent variables affect the dependent variables. Questionnaires were used to obtain data from the sampled population of 400 respondents. The population of the study area is 2,988,900, which comprises two groups: the first group includes Local Government officials and stakeholders such as chairmen, the Director of Finance, the Director LG Health Authority, Head of the Local Government Health Department. Chairman, Ward Development Committee (WDC), Chairman, Local Government Advisory Committee (LGAC). The second group comprise healthcare providers, such as the officer in charge of PHCs, Zamfara State Drugs and Medical Consumables Agency (DMCA), Zamfara State Primary Health Care Board (ZSPHCB), PHC Pharmacy Technicians, and the PHC Clinical Staff in the study area. Taro Yamane's (1967) sample size determination formula was used by relying on the National Bureau of Statistics' projection of 2022, which was based on the 2006 National Population Report for the study area. The data collected were analysed using a simple linear regression statistical tool to test the null hypothesis.

Data Presentation and Interpretation

Table 1: Sample Size Determination

S/N	LGAs	Population	Percentage	Target Population	Sample size by LGA
1	Gusau	682,700	23	Staff of PHCs in the study area	91.3
2	Maru	521,500	17.4	PHC Clients	69.7
3	Bukkuyum	384,900	13	Head of LGA Health Dept.	52
4	Maradun	369,300	12.3	LGA Chairmen & officials	49
5	K/Namoda	507,500	17.	Officials of the State PHC Board	68
6	Zurmi	523,000	17.4	Drugs & medical consumables mgt agency (DMCA) and NGOs responsible for health in the study area	70
	Total	**2988,900**	**100**		**400**

Source: (National Population Commission, 2022)

The proportionate sampling size formula was used to determine the sample size per LGA

Formula = $\frac{\text{Population size per group (LGA)}}{\text{Total Population}} \times \text{Total sample size}$

Note that, as mentioned above, a total of 400 questionnaires were distributed to the respondents to obtain data. However, 311 copies (i.e., 77.8%) were returned. This means that 89 (22.3%) were not returned.

Table 2: LGAs Budget and PHC Allocation in the Study Area

S/N	NAME OF LGA	YEAR	REVISED BUDGET ₦	ALLOCATION TO PHCs ₦	ALLOCATION FOR DRUGS ₦	PERCENTAGE
1	**GUSAU**	2025	13,608,343,980	475,000,000	80,000,000	3.49%
2	**MARU**	2025	13,047,564,790	596,500,000	65,000,000	4.57%
3	**MARADUN**	2025	10,931,072,430	388,000,000	50,000,000	3.55%
4	**BUKKUYUM**	2025	10,984,753,510	332,082,440	40,000,000	3.02%
5	**KAURA-N**	2025	11,425,072,450	707,000,000	40,000,000	6.19%
6	**ZURMI**	2025	11,988,252,350	471,710,900	40,000,000	3.93%
	TOTAL		**71,985,059,510**	**2,970,293,340**	**315,000,000**	

Source: Department of Planning, Research and Statistics, Ministry of Local Government and Chieftaincy Affairs, Zamfara State 2026.

Table 3: Mean Responses on Local Government Healthcare Funding and Essential Medicine

S/N	Questionnaire Items	Mean	Std. Deviation
1	Local government funding is sufficient to maintain and improve the consistent supply of essential drugs such as antibiotics and amoxicillin at the Primary Health Care facility in my locality.	3.37	1.205
2	The budget for PHCs allocated by the local government adequately supports the provision of disease-preventable vaccines for routine immunisations in my community.	3.21	1.327
3	Local government funding ensures the timely provision of pain relief and anti-inflammatory medications, like paracetamol, which are readily accessible at the Primary Health Care facility in my locality.	3.34	1.199
4	The financial support from the local government is effectively utilised to enhance healthcare services.	3.20	1.225

5	Local government funding is consistently provided to meet the growing medical needs of patients, such as nutritional supplements and essential vitamins, at the primary health care centre in my locality, and ensure regular restocking	3.10	1.224

Source: Statistical Analysis of data from the field, 2025.

Above are the questions and responses of respondents as follows:

The first questionnaire item asked the respondents whether the local government healthcare funding is sufficient to maintain and improve healthcare facilities in their areas (see Table 3). The responses showed a Mean of 3.37 and a standard deviation of 1.205. Respondents indicate moderate agreement, leaning toward "Agree" on a 5-point Likert scale. The mean of 3.37 implies funding is perceived as sufficient for improvement and sustenance of essential drugs supply, which contradicts the empirical data presented in Table 3, indicating that all the local Government budget allocations for PHCs and drug supplies were grossly less than the 15% funding thresholds for health recommended by African Heads of Government at the Abuja Declaration of 2001. For instance, the Zurmi Local Government's 2025 budget was ₦11,988,252,350, out of which, only a paltry sum of ₦ 471,710,900 was allocated to PHCs, and ₦40,000,000 for drug supply in the same year, indicating a 3.93% allocation. Conversely, the standard deviation of 1.205 implies moderate variability, indicating a noticeable divergence of views, with some strongly agreeing and others less convinced, reflecting different experiences.

Item 2 responds to whether the 2025 budget (see Table 3) allocated by the local government adequately supports the operational needs of primary health centres. The Mean is 3.21, and the standard deviation is 1.327. A mean of 3.21 points to mild perceptions of sufficiency for daily operations like supplies. The highest SD (1.327) signals substantial disagreement, implying polarised views, which may be due to inconsistent budget implementation in different LGAs.

Item 3 responses on whether local government funding ensures the timely provision **of** pain relief and anti-inflammatory medications, like paracetamol, and are readily accessible at the Primary Health Care facility in my locality (Mean = 3.34, SD = 1.199)**.** The mean shows moderate agreement because the mean of 3.34 indicates fair confidence in the timely provision of pain relief and anti-inflammatory drugs. The SD of 1.199 shows moderate consensus, which shows reliable but not uniform perceptions of responsiveness.

Item 4 responded whether the financial support from the local government is effectively utilised to enhance healthcare services (Mean = 3.20, SD = 1.225). The mean of 3.20 is slightly above neutral, and a mild agreement on the effective use of funds for service enhancements such as equipment or training. It highlights cautious optimism about utilisation efficiency. An SD of 1.225 indicates a moderate spread in responses, pointing to some scepticism due to varying accountability experiences.

Lastly, item 5 responded whether local government funding is consistently provided to meet the ongoing needs of primary healthcare (Mean = 3.10, SD = 1.224)**.** The mean of 3.10 showed the weakest agreement because it is nearest to neutral or undecided. It underscored doubts about the reliability of healthcare funding for sustained needs. The SD of 1.224 indicates moderate variability, which captures frustrations over delays or unpredictability common in public finance contexts.

Table 4: Mean Responses on Supply of Essential Drugs for Primary Health Centers

	Questionnaire Items	Mean	Std. Deviation
1	Essential antibiotics, such as amoxicillin, are consistently available without stockouts at my local health centre.	3.54	1.181
2	My local health centre maintains an adequate supply of antimalarial drugs to meet community needs	3.33	1.129
3	Vaccines for routine immunisations are always sufficiently stocked at my local health centre.	3.41	1.186
4	Pain relievers and anti-inflammatory medications, like paracetamol, are readily accessible at my local health center	3.37	1.172
5	My local health centre regularly restocks essential vitamins and nutritional supplements for patients.	3.14	1.254

Statistical Analysis of data from the field, 2025.

The first questionnaire item measured respondents' perceptions of whether essential antibiotics, such as amoxicillin, are consistently available without stockouts at their local health centre as recommended by the NPHCDA. The responses showed a mean of 3.54 and a standard deviation of 1.181. This indicates moderate to strong agreement, leaning firmly toward "Agree," suggesting reliable availability of key antibiotics. The standard deviation of 1.181 reflects moderate variability, meaning opinions vary somewhat, with most endorsing consistency but some noting occasional shortages based on local experiences.

Item 2 assessed whether the local health centre maintains an adequate supply of antimalarial drugs to meet community needs. The mean was 3.33 with a standard deviation of 1.129. A mean of 3.33 points to moderate agreement on sufficiency for malaria management, a critical need in many areas. The standard deviation of 1.129 indicates moderate consensus, implying generally positive but not unanimous views, possibly due to seasonal demand fluctuations.

Item 3 captured responses on whether vaccines for routine immunizations are always sufficiently stocked at the local health center. It yielded a mean of 3.41 and a standard deviation of 1.186. The mean shows moderate agreement, reflecting fair confidence in vaccine availability for preventive care. The standard deviation of 1.186 suggests moderate variability, highlighting some discrepancies in perceptions likely linked to supply chain reliability.

Item 4 evaluated whether pain relievers and anti-inflammatory medications, like paracetamol, are readily accessible at the local health center. Responses recorded a mean of 3.37 and a standard deviation of 1.172. This means conveys moderate agreement, indicating good accessibility for common drugs for relief. The standard deviation of 1.172 points to a moderate spread, with broad support tempered by isolated reports of gaps.

Lastly, item 5 examined whether the local health centre regularly restocks essential vitamins and nutritional supplements for patients. It showed the lowest mean of 3.14 and a standard deviation of 1.254. The mean nearest to neutral signals weak agreement, underscoring concerns about inconsistent replenishment for nutritional support. The highest standard deviation of 1.254

captures substantial variability, reflecting polarised experiences with restocking delays common in resource-limited settings.

Hypothesis

$H0_1$: Local Government healthcare funding does not affect the supply of essential medicines in Gusau, Maru, Kaura-Namoda, Bukkuyum, Maradun, and Zurmi Local Government Areas of Zamfara State.

Table 5: Model Summary

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate
1	.844[a]	.712	.709	.20690

a. Predictors: (Constant), LGA HealthCare Funding

The Model summary shows that the R-squared is 0.712. This represents the proportion of variance in the supply of essential drugs explained by local government healthcare funding. The R^2 of 0.712 means that 71.2% of the variation in the supply of essential drugs can be explained by local government healthcare funding. Hence, the remaining 28.8% can be explained by other variables not captured in this model. The Standard Error of the Estimate (0.20690) indicates that the model's predictions are relatively precise, with residuals tightly clustered around the regression line.

Table 6: ANOVA[a]

		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	393.054	1	393.054	9181.578	.000[b]
	Residual	12.885	301	.043		
	Total	405.939	302			

a. Dependent Variable: Supply of Essential Drugs

b. Predictors: (Constant), Local Government HealthCare Funding

The ANOVA table assesses the overall significance of the regression model from a statistical perspective. As provided by the table, the F-statistic (9181.578) shows that the model explains a significant portion of the variance. Additionally, the ANOVA results confirm that the regression model is statistically significant (p=0.000).

Table 7: Coefficients[a]

!		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.254	.035		7.372	.000
	Local Government HealthCare Funding	.857	.010	.884	85.821	.000

a. Dependent Variable: Supply of Essential Drugs

The coefficient table shows that local government healthcare funding has a significantly positive effect on the supply of essential drugs in the study area (β 0.857, T=85.821, P=0.000) as reflected

in Kaura-Namoda LGA, for example, where out of the ₦707,000,000 allocation to PHCs from the 2025 budget of ₦11,425,072,450, ₦40,000,000 was earmarked for drugs, which represented 6.19%. The P-value is 0.000, which is less than the level of significance (0.05). Thus, there is adequate justification to reject the null hypothesis and conclude that local government healthcare funding has a significantly positive effect on the supply of essential drugs in Gusau, Maru, Kauran Namoda, Bukkuyum, Maradun, and Zurmi local government areas of Zamfara state. Furthermore, the Beta value of 0.857 indicates that a unit increase in local government healthcare funding increases the supply of essential drugs by 85.7%.

Thematic Analysis of Qualitative Interviews

Interviews were conducted with relevant stakeholders in the study area and analysed through thematic coding to explore the realities of local government healthcare funding and its influence on essential medicines for PHCs. The analysis reveals a consistent narrative of dependency on external support, operational resilience through structured programmes, and systemic barriers that hinder full effectiveness.

Theme 1: Sources and Mechanisms of Funding

Respondents across all the LGAs described local government funding as minimal and often reactive, with the bulk of resources flowing through structured external programmes. The state government's ZACHEMA programme through the Drugs and Medical Consumables Agency, Basic Healthcare Provision Fund (BHCPF), and NGOs such as UNICEF, MSF, WHO, and World Bank were repeatedly highlighted as the major providers of funds and essential medicine intervention. In Maru local government, one of the respondents explained that health facilities receive monthly or quarterly assistance on drug supply from ZAMCHAMA under UNICEF, alongside state-sponsored free drug distribution to patients. In Kaura-Namoda, another respondent also emphasised a layered system where local PHC funding attracts corresponding support in the form of counterpart funding by the state government. In Gusau local Government, a respondent stated that the PHC department has no dedicated income stream except during disease outbreaks, when the chairman releases funds. For instance, he recently released ₦5 million in 2024 during the last cholera outbreak.

One of the interviewees in Maradun local government identified ZACHEMA, BHCPF, and national capitation as core funding sources for the local government. Similarly, a respondent in Bukkuyum LGA attributed drug procurement funds for the vulnerable populations to the federal government, Zamfara state ZACHEMA programme, and UNICEF. PHC facilities in Maru and Bukkuyum usually submit monthly business plans to access quarterly disbursements, while Zurmi uses SWOT analyses and annual operational plans to justify funding under the State PHC Board.

Theme 2: Availability of Essential Drugs

Drug availability in the study area showed LGA-specific patterns, with strong reliance on subsidised medicines intervention programmes, which are inadequate. Kaura-Namoda reported no drug challenges, with ZACHEMA providing free drugs to pregnant women, children, and men. A respondent in Bukkuyum L.G.A. stated that there is no shortage, thanks to the monthly supplies from the local government, ZACHEMA, UNICEF, and other NGOs. In contrast, a respondent in Gusau LGA maintained that drugs are insufficient across the 11 wards despite ZACHEMA and BHCPF's efforts. BHCPF subsidises drugs for patients so they have to pay 10% actual cost, but limits its provision to one facility per ward instead of all the facilities in each ward. In Zurmi L.G.A., one of the respondents identified drug insufficiency as a major challenge across all health

facilities in the local government. In Maradun L.G.A., a participant noted that government-free drugs only reach a few beneficiaries. This claim was confirmed by a patient/participant at Huzara PHC, adding that drugs are sometimes free and sometimes they are purchased by patients. At Zurmi LGA, one of the participants also confirmed free vaccination drugs, but stated that patients purchased routine medications.

Theme 3: Financial Capacity of Local Governments

All the respondents acknowledged that local governments have some level of resources but lack the capacity to sufficiently sustain the provision of basic healthcare services, including medication. For example, in Maru LGA, a respondent said, "My local government has the money but not much… health is wide, so we need more assistance from the state, federal government, and non-governmental organisations." In Kaura-Namoda LGA, another interviewee reaffirmed this position that both financial and material capacity at his clinic are inadequate. "They don't have the financial capacity to cover all the healthcare facilities in the L.G.A." In Gusau L.G.A., a participant maintained that the local government distributes state-government-purchased drugs and intervenes only during outbreaks. Buttressing this view, a participant from Sabon Gari in Gusau added that the L.G.A. depends entirely on state counterpart funding and donor agencies' interventions like UNICEF and the World Bank. Conversely, an interviewee in Zurmi local government said, "We have been receiving support from some partners such as UNICEF, ZACHEMA, Médecins Sans Frontières (MSF), etc." In Maradun, one of the respondents concluded that the L.G.A. cannot function without the national or donor agency support. In Bukkuyum LGA, a respondent acknowledged his local government's assistance during disease outbreaks and bandit attacks. There was no knowledge or available record of the PHC budget capturing provision for essential medicines in Maru LGA, because, according to the director, he was posted to the L.G.A. recently; Kaura-Namoda and Gusau respondents could not provide figures; in Bukkuyum, the deputy director was unsure; only one PHC in Gusau LGA reported an annual budget of ₦3,285,000.

Findings

At the end of the investigation, the result of the study showed that local government healthcare funding has a significant positive effect on the supply of essential drugs in Gusau, Maru, Kauran Namoda, Bukkuyum, Maradun, and Zurmi LGAs of Zamfara state. Also, a unit increase in local government healthcare funding increases the supply of essential medicines by 85.7%.

The results of the hypothesis tests from the simple linear regression analyses and integration evaluate the extent to which local government healthcare funding influences key essential medicines for PHCs. As indicated above, the null hypothesis formulated was rejected, indicating a positive and significant effect of funding on essential drugs, though with heavy reliance on external support amidst funding challenges.

The findings collectively revealed that essential drug supply depends largely on donor agencies and the state government due to the local government's weak funding capacity to adequately undertake the provision of medicines. This hampers continuous drug availability, requiring more sustainable and adequate funding mechanisms.

Observation

1. The study observed inadequate drug availability to meet the growing demand across PHC facilities in the study area. The Basic Health Care Provision Fund (BHCPF) quarterly medicine intervention program was not free, but subsidised in one facility per ward. The BHCPF intervention was

inconsistent in supply and was unable to reach all 147 wards in the state. They adopt one PHC per ward to distribute drugs.

2. Due to weak financial capacity, the local governments showed specific patterns of strong reliance on subsidised medicines. The L.G.A.s only provide drugs during emergencies or disease outbreaks.
3. The high cost of drugs and the scarcity of medicines compel patients to patronise unregulated patent medicine vendors.
4. Insufficient availability of basic medicines significantly contributes to out-of-pocket expenses for healthcare in public facilities.
5. There are no clear budgetary provisions and data for PHC drugs in most of the LGAs. Most of the PHCs don't have a pharmacy, while some with a pharmacy don't have stock.

Conclusion

The study concludes that Local Government healthcare funding has a significant effect on the supply of essential drugs for PHCs in Gusau, Maru, Kaura-Namoda, Maradun, Bukkuyum, and Zurmi LGAs of Zamfara State. However, due to weak financial capacity, the LGAs largely depend on external sources, such as Zamfara Contributory Health Management Agency (ZACHEMA), BHCPF, and health-related NGOs, for funding the availability and affordability of PHC drugs, enabling PHCs to attend to the growing health needs in the communities they serve.

Recommendations

Based on the findings and conclusions of the study, the following are recommended:

1. Local governments should enhance their revenue generation and strengthen their financial management mechanisms to reduce dependence on external funding for essential drugs. They should also prioritise creating stable funding streams specifically earmarked for the timely procurement of essential medicines to ensure consistent availability.
2. Local governments should also strengthen local pharmaceutical funding by increasing health budgets and improving supply chain management. They should coordinate more closely with drug subsidy programs (ZACHEMA, BHCPF, NGOs) to optimise resource use and ensure equitable drug distribution across all wards and LGAs in the state.

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