ISSN: 3071-2653

ScienceFrontier Open Access

Research Article

International Journal of Public Health Research and Epidemiology

Received: 08 April 2026
Accepted: 16 April 2026
Published: 22 April 2026

Health Management, Financing, and Drug Revolving Fund Optimisation in Bayelsa State, Nigeria: A Cross-Sectional Study

Konyefa Ebiasuode Felix1[1*] | Ibegi Saviour[1] | Messiah TMT[1] | Olodiama Providencia Chichi[1] | Peter A. Owonaro[2] | Suleiman A. Ismail[1] | Ganiyu Kehinde[1]

[1] *Department of Clinical Pharmacy and Pharmacy Practice, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria & Department of Clinical Pharmacy /Public Health Pharmacy Bayelsa Medial University, Bayelsa State, Nigeria*

[2] *Department of Clinical Pharmacy, Bayelsa Medical University, Yenagoa, Bayelsa State, Nigeria*

***Corresponding Author:** Konyefa, Ebiasuode Felix, *Department of Clinical Pharmacy and Pharmacy Practice, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria & Department of Clinical Pharmacy /Public Health Pharmacy Bayelsa Medial University, Bayelsa State, Nigeria*

Citation: Konyefa, Ebiasuode Felix, Ibegi, Ibegi Saviour Henry, Messiah TMT, Olodiama, Providencia Chichi, Peter, A. Owonaro et al (2026). Health Management, Financing, and Drug Revolving Fund Optimisation in Bayelsa State, Nigeria: A Cross-Sectional Study, J *International Journal of Public Health Research and Epidemiology*; 2 (2) 10, **DOI:** *IJPHRE-RA-26-10*

Abstract:

Background: Healthcare financing and drug supply management are pivotal to achieving universal health coverage in resource-constrained settings. Bayelsa State, Nigeria, faces compounded challenges of fiscal scarcity, geographic isolation, and weak institutional capacity, rendering its Drug Revolving Fund (DRF) scheme vulnerable to underperformance. This study investigated health financing patterns, DRF utilisation, gains, and community engagement across selected healthcare facilities in Bayelsa State.

Methods: A cross-sectional survey was conducted among 208 healthcare workers drawn from seven facilities, including tertiary, secondary, and primary-level centres, using simple random sampling. Structured questionnaires assessed financing source distribution, DRF utilisation, gains, and community engagement. Chi-square with Cramér's V, one-way ANOVA with partial eta squared (η^2), and independent-samples t-test with Cohen's d were employed for hypothesis testing.

Results: General tax revenues constituted the largest financing source (50.5%), followed by social insurance (35.1%) and bilateral assistance (35.1%). DRF utilisation was low to moderate (52.4±10.1%; Cramér's $V = 0.404$, $p < 0.001$), as were DRF gains (58.3±8.2%; Cramér's $V = 0.402$, $p < 0.001$). Community engagement was the weakest domain (38.1±17.6%; Cramér's $V = 0.410$, $p \leq 0.001$). ANOVA revealed significant inter-facility variation in financing source distribution ($\eta^2 = 0.22 \pm 0.10$, $p \leq 0.001$). t-test analysis demonstrated a moderate to significant relationship between financing allocation and healthcare service quality (Cohen's d range: −0.96 to +1.31).

Conclusions: Bayelsa State's DRF scheme is constrained by inadequate state capitalisation, low community engagement, and inequitable financing distribution. Multi-pronged interventions encompassing health insurance expansion, transparent governance, community mobilisation, and technology-driven supply-chain management are urgently needed to optimise DRF performance and strengthen the state's health financing architecture.

Key words: drug revolving fund; health financing; community engagement; universal health coverage; bayelsa state; nigeria; pharmaceutical supply chain.

Introduction:

Access to essential medicines and adequate health financing are foundational pillars of functional healthcare systems, particularly in low- and middle-income countries (LMICs) where out-of-pocket payments impose catastrophic financial burdens on households. In Nigeria, more than 70% of total health expenditure is financed directly by individuals, a proportion far exceeding the World Health Organization's recommended ceiling of 20–30% [1, 2]. Bayelsa State, located in the Niger Delta region, presents an especially precarious context: a predominantly riverine geography, limited road infrastructure, heavy dependence on federal oil-revenue transfers, and high poverty rates interact to constrain both the availability and affordability of healthcare services [3].

The Drug Revolving Fund (DRF) scheme was introduced into Nigeria's health system in 1988 following the adoption of the National Health Policy, itself

inspired by the 1987 Bamako Initiative [4]. Operationally, the DRF functions on a cost-recovery model in which initial seed capital from government or donor sources is used to procure essential medicines, which are subsequently sold at subsidised prices; the resulting revenue is reinvested to replenish stocks, thereby theoretically sustaining a perpetual supply [5]. When implemented with fidelity, the DRF model can meaningfully improve drug availability, reduce patient expenditure, and enhance health system trust [6]. In practice, however, the scheme has been hampered across Nigerian states by inadequate capitalisation, governance deficiencies, supply-chain failures, and limited community participation [7].

Despite a growing literature on DRF performance at national and subnational levels, empirical evidence specific to Bayelsa State remains scarce. No published quantitative study has simultaneously characterised the distribution of financing sources across facility types, quantified DRF utilisation and gains, or assessed the degree of community engagement with the scheme within this context. This evidence gap is consequential: Bayelsa's geographic isolation and ethno-cultural specificities render extrapolation from other Nigerian states unreliable. Moreover, inter-facility financing heterogeneity - if substantial - has direct implications for equity and resource allocation within the state.

This study therefore aimed to: (i) characterise the current distribution of health financing sources across selected facilities in Bayelsa State; (ii) quantify the level of DRF utilisation and gains; (iii) assess community engagement with the DRF scheme; and (iv) examine the relationship between financing allocation and the quality of healthcare services. Findings are intended to inform evidence-based policy recommendations for optimising the DRF and strengthening health financing governance in Bayelsa State and analogous sub-national contexts in Nigeria.

2. Methods:

2.1 Study Design and Setting

A descriptive cross-sectional survey was conducted between January and March 2025 across seven healthcare facilities in Bayelsa State, Nigeria: the Federal Medical Centre (FMC) Yenagoa, the Niger Delta University Teaching Hospital (NDUTH) Okolobiri, the Bayelsa State Specialist Hospital, the Nigeria Law School Clinic (Yenagoa campus), the Odi Primary Healthcare Centre, and two additional state-owned secondary facilities. Facilities were purposively selected to represent the full spectrum of care levels - tertiary (federal and state), secondary, and primary - thereby capturing institutional heterogeneity in financing and DRF management.

2.2 Population, Sample Size, and Sampling

The target population comprised all clinical pharmacy and pharmacy practice personnel employed across the seven facilities, estimated at 450 individuals. Sample size was calculated using Fisher's formula at a 99% confidence level ($z = 2.58$), standard deviation of 0.5, and a margin of error of 5%, yielding a minimum of 269 participants. Simple random sampling was used to recruit participants sequentially until the target was reached. Of 269 questionnaires distributed, 208 were returned fully completed (response rate: 77.3%), constituting the analytical sample.

2.3 Data Collection Instrument

A 31-item structured, self-administered questionnaire was developed and validated by a panel of healthcare management and pharmaceutical sciences experts. Content validity was assessed using the Content Validity Index (CVI); internal consistency was established via Cronbach's alpha. The instrument comprised five sections: (A) socio-demographic characteristics; (B1) distribution of health financing sources; (B2) DRF utilisation; (B3) relationship between financing allocation and service quality; and (B4) community engagement. Each item was assessed on a three-point scale (Agree, Neutral, Disagree). Participation was voluntary, anonymous, and conditional on written informed consent.

2.4 Statistical Analysis

Data were entered and analysed using IBM SPSS Statistics, version 25.0. Descriptive statistics (frequencies and percentages) summarised socio-demographic and response distributions. Four inferential analyses addressed the study hypotheses:

- Chi-square (χ^2) with Cramér's V: tested inter-facility differences in DRF utilisation (H_{01}), gains (H_{02}), and community engagement (H_{03}). Cramér's V was interpreted as small (< 0.10), medium (0.10–0.30), or large (≥ 0.50).
- One-way ANOVA with partial η^2: assessed inter-facility variation in financing source distribution (H_{04}). Effect sizes were interpreted as small ($\eta^2 > 0.01$), medium (> 0.06), or large (> 0.14).
- Independent-samples t-test with Cohen's d: examined the relationship between financing source and DRF-derived healthcare quality outcomes (H_{05}). Cohen's d was categorised as small (0.20), medium (0.50), or large (≥ 0.80).

The significance threshold was set at $\alpha = 0.05$ throughout. The assumption of expected cell frequencies ≥ 5 was verified before chi-square testing.

2.5 Ethical Considerations:

Ethical approval was obtained from the Research Ethics Committee of Niger Delta University, Bayelsa State (reference: NDU/REC/2024). All participants provided written informed consent. Data were anonymised and stored securely, accessible only to the research team.

3. Results:

3.1 Participant Characteristics

A total of 208 participants completed the survey (response rate 77.3%). The majority were female (56.7%), aged 21–30 years (74.0%), married (63.9%), and held a graduate degree (88.5%). Most respondents were Principal Pharmacists (69.7%) with 1–5 years of facility-based practice (55.8%). The largest proportions were drawn from NDUTH Okolobiri (33.2%) and FMC Yenagoa (29.3%). Full demographic characteristics are presented in Table 1.

Variable / Category	Frequency (n)	Percentage (%)
Age (years)		
21–30	154	74.0
31–40	41	19.7
Above 41	13	6.3
Marital Status		
Married	133	63.9
Single	73	35.1
Divorced	2	1.0
Qualification		
Diploma (OND/ND)	4	1.9
Graduate degree	184	88.5
Postgraduate degree	20	9.6
Professional Designation		
Pharmacist	5	2.4
Principal Pharmacist	145	69.7
Pharmacy Technician	20	9.6
Assistant Director	10	4.8
Chief Pharmacist	8	3.8
Senior Pharmacist	16	7.7
Community Health Officer	4	1.9
Years of Practice		
1–5 years	116	55.8
6–10 years	44	21.2
> 10 years	48	23.1
Gender		
Male	90	43.3
Female	118	56.7

Table 1: *Socio-demographic characteristics of participants (N = 208).*

3.2 Distribution of Health Financing Sources:

General tax revenues were the most frequently endorsed financing source (50.5% agreement), followed by bilateral assistance and social insurance (both 35.1%). Multilateral agency support and voluntary insurance schemes received the lowest agreement (22.6% and 20.2% respectively). Individual out-of-pocket payments were acknowledged by 28.4% of respondents. Full results are shown in Table 2.

Financing Source	Agree n (%)	Neutral n (%)	Disagree n (%)
General Tax Revenues	105 (50.5)	61 (29.3)	42 (20.2)
Social Insurance System	73 (35.1)	65 (31.3)	70 (33.7)
Voluntary Insurance Schemes	42 (20.2)	89 (42.8)	77 (37.0)
Charitable Donations / Financial Aid	65 (31.3)	50 (24.0)	93 (44.7)
Bilateral Assistance (e.g. USAID)	73 (35.1)	65 (31.3)	70 (33.7)
Multilateral Agencies (WHO, UNICEF, etc.)	47 (22.6)	90 (43.3)	71 (34.1)
Individual Out-of-Pocket Payment	59 (28.4)	55 (26.4)	94 (45.2)
Mean ± SD	**31.9 ± 9.3%**	**32.6 ± 7.0%**	**35.5 ± 7.8%**

Table 2: *Distribution of healthcare financing sources across facilities in Bayelsa State (N = 208).*

ANOVA revealed significant inter-facility variation in financing source reliance for all seven sources (F-values: 3.30–24.16; $p \leq 0.004$ across sources), with overall partial $\eta^2 = 0.22 \pm 0.10$ (Table 5), indicating a medium-to-large aggregate effect. Voluntary insurance schemes displayed the largest between-facility effect ($\eta^2 = 0.419$), followed by charitable donations ($\eta^2 = 0.288$) and out-of-pocket payments ($\eta^2 = 0.248$). These findings reject H_{04} and confirm significant inter-facility heterogeneity in financing patterns.

3.3 DRF Utilisation and Gains:

DRF utilisation averaged 52.4±10.1%. The highest agreement pertained to bulk acquisition of vital medicines (66.3%), whereas initial government capitalisation attracted the weakest endorsement (39.9%). DRF gains averaged 58.3±8.2%, led by endorsement of defined procurement and revenue management processes (69.2%) and improved drug availability (65.9%). Sustainability of supplies without external funding was the weakest gain domain (46.6%). Chi-square analysis confirmed that both utilisation (Cramér's $V = 0.404 \pm 0.02$, $p < 0.001$) and gains (Cramér's $V = 0.402 \pm 0.05$, $p < 0.001$) remained at low-to-medium levels across facilities, supporting acceptance of H_{01} and H_{02} (Table 3).

Indicator	DRF Utilisation		DRF Gains		χ^2 (df)
	Agree %	Disagree %	Agree %	Disagree %	Cramér's V
Initial capitalisation (state/donor funds)	39.9	21.2	-	-	70.81 (12)
Bulk acquisition of vital medicines	66.3	13.9	-	-	72.12 (12)
Drugs sold at subsidised rates	46.2	21.2	-	-	55.02 (12)
Revenue reinvested into scheme	57.2	21.6	-	-	60.57 (12)
Improved availability of vital medicines	-	-	65.9	27.4	89.30 (18)
Drugs comparably affordable	-	-	54.8	25.5	95.36 (12)
Supplies independent of external funding	-	-	46.6	17.3	46.62 (12)
Fulfils international quality requirements	-	-	54.8	13.5	64.92 (12)
Defined procurement / revenue management	-	-	69.2	5.8	73.92 (12)
Mean ± SD	**52.4 ± 10.1%**	**19.5 ± 3.2%**	**58.3 ± 8.2%**	**17.9 ± 7.9%**	**Agree/disagree $p < 0.001$**

3.4 Community Engagement

Community engagement with the DRF averaged 38.1±17.6% - the lowest of the four study domains. Community participation in and utilisation of the drug scheme was the most frequently endorsed item (64.4%), whereas active community engagement efforts by facilities were reported by only 15.4% of respondents. Political will for DRF operations scored the second-lowest agreement (22.1%). Chi-square analysis yielded Cramér's V = 0.410±0.05 ($p \leq 0.001$, df = 12), confirming a low-to-medium level of community engagement consistent with H_{03} (Table 4).

Community Engagement Domain	Agree n (%)	Neutral n (%)	Disagree n (%)	χ^2 / Cramér's V
Communities participate & utilise DRF scheme	134 (64.4)	60 (28.8)	14 (6.7)	75.18 / 0.425
Political will for DRF operations	46 (22.1)	112 (53.8)	50 (24.1)	86.33 / 0.457
Transparent financial records available	87 (41.8)	84 (40.4)	37 (17.8)	78.55 / 0.435
Community engagement efforts undertaken	32 (15.4)	141 (67.8)	35 (16.8)	40.03 / 0.310
Feedback mechanisms in place	97 (46.6)	68 (32.7)	43 (20.7)	74.49 / 0.423
Mean ± SD	**38.1 ± 17.6%**	**44.7 ± 14.4%**	**17.2 ± 5.8%**	**$p \leq 0.001$ for all domains**

Table 4: *Community engagement with DRF across facilities in Bayelsa State (N = 208).*

3.5 Financing Allocation and Service Quality:

The t-test analysis identified a moderate to significant relationship between financing source and healthcare quality outcomes. Social insurance was most strongly associated with well-defined procurement and revenue management (Cohen's d = −1.601, $p < 0.001$). General tax revenues and individual out-of-pocket payments were significantly associated with defined procurement processes (Cohen's d = −1.197 and −1.175 respectively, $p < 0.001$). Bilateral assistance (USAID) showed the largest positive association with improved drug availability (Cohen's d = 1.039), while voluntary insurance showed the strongest association with improved drug availability among non-government sources (Cohen's d = 0.264, $p < 0.001$). These results reject H_{05}, confirming a significant relationship between financing source and quality of service.

Financing Source	Agree %	F-value	df	η^2	p-value
General Tax Revenues	50.5	6.526	6	0.163	< 0.001
Social Insurance System	35.1	4.464	6	0.118	< 0.001
Voluntary Insurance Schemes	20.2	24.164	6	0.419	< 0.001
Charitable Donations	31.3	13.536	6	0.288	< 0.001
Bilateral Assistance (USAID)	35.1	3.296	6	0.090	0.004
Multilateral Agencies	22.6	7.406	6	0.181	< 0.001
Individual Out-of-Pocket	28.4	11.036	6	0.248	< 0.001
Mean ± SD	**31.9 ± 9.3%**	**10.06 ± 6.64**	**6**	**0.22 ± 0.10**	**≤ 0.001**

Table 5: *ANOVA: Inter-facility variation in health financing source distribution (N = 208).*

4. Discussion:

4.1 Financing Source Distribution:

The predominance of general tax revenues (50.5%) as the primary financing source aligns with Nigeria's structural reliance on government budgetary allocations for public health facilities, yet remains substantially below international benchmarks. Nigeria's health budget - estimated at 3.95–4.92% of total expenditure - falls far short of the Abuja Declaration target of 15% [8]. The significant inter-facility variation in financing reliance (overall η^2 = 0.22) mirrors findings from Onwujekwe et al. [9] in Enugu State, where facility type (secondary vs. tertiary) and ownership (federal vs. state) strongly

shaped funding diversity. In Bayelsa State, tertiary facilities likely access more diverse streams including bilateral and multilateral aid, while primary facilities depend overwhelmingly on government allocation - a structural inequity with direct implications for drug supply and service quality.

The relatively weak endorsement of voluntary insurance schemes (20.2%) reflects national trends: Nigeria's National Health Insurance Authority covers fewer than 7% of the population, with particularly low penetration in the informal sector and rural areas [10]. This underscores the urgency of expanding community-based health insurance (CBHI) and harmonised social insurance instruments, as demonstrated successfully in Ghana and Rwanda [11, 12].

4.2 DRF Utilisation:

The low-to-moderate DRF utilisation rate (52.4%; Cramér's V = 0.404) documents persistent institutional barriers to the scheme's full operation. The weakest utilisation domain - initial government capitalisation (39.9% agreement) - is particularly diagnostic: without consistent seed funding, the self-sustaining logic of the revolving fund collapses. Ohaju-Obodo et al. [7] similarly found that only 35.5% of surveyed facilities in a six-state Nigerian study had operational DRF schemes, implicating inadequate initial capitalisation and management deficiencies as primary constraints. In contrast, Uzochukwu et al. [13] found substantially superior drug availability in Bamako Initiative-equipped primary health centres compared to non-equipped counterparts (35.4 vs. 15.3 essential drugs; $p < 0.05$), underscoring what is possible when the DRF is adequately resourced. The gap between this potential and current Bayelsa State performance signals a significant missed public health opportunity.

4.3 DRF Gains:

Despite low utilisation, participants acknowledged meaningful - if still limited - gains: 69.2% confirmed clear procurement and revenue management processes, and 65.9% agreed that drug availability had improved. These gains are consistent with Ali's [14] evaluation of the Khartoum revolving drug fund, where DRF facilities achieved 93–100% medicine availability rates over twelve months. The most problematic dimension - operating without external funding (46.6% agreement) - reflects the documented tension between financial self-sufficiency and equitable access in resource-limited settings [15, 16]. Without reliable revenue reinvestment, the scheme's sustainability is perpetually dependent on donor benevolence, contradicting the DRF's foundational design principle.

4.4 Community Engagement:

Community engagement was the weakest performance domain (38.1%), with only 15.4% of respondents reporting active facility-level efforts to engage communities in health financing discussions. This finding carries significant policy implications. Evidence from Ghana [17], southeast Nigeria [18], and Laos [19] consistently identifies community trust and participation as indispensable enablers of DRF performance: when communities understand the scheme's mechanics and benefits, utilisation rises and revenue generation improves. The notably low political will for DRF operations (22.1%) further compounds this challenge - without political commitment, community mobilisation efforts lack institutional backing. Bayelsa State's strong communal structures (Community Development Committees, traditional leadership systems, women's associations) represent an underexploited asset for community-based health insurance models and DRF advocacy that could transform this landscape.

4.5 Financing Allocation and Service Quality:

The t-test analysis revealed that social insurance was most strongly associated with defined procurement and accountability frameworks (Cohen's $d = -1.601$), consistent with evidence that mandatory contribution schemes create institutional accountability pressures that improve fund management [20]. The positive association between bilateral funding (USAID) and improved drug availability (Cohen's $d = 1.039$) reflects the targeted, conditional nature of bilateral aid, which typically mandates performance metrics. Conversely, out-of-pocket payments, while associated with drug affordability outcomes, carry well-documented equity penalties - they tend to exclude the poorest and most vulnerable from care [2, 21]. The overall moderate-to-significant Cohen's d range across financing–quality pairs (-0.96 to +1.31) substantiates the imperative for strategic diversification of funding streams to avoid over-reliance on any single, potentially inequitable source.

4.6 Limitations:

This study has several limitations that should inform interpretation. First, the cross-sectional design precludes causal inference; associations between financing source and service quality cannot be directionally attributed. Second, self-report data from healthcare workers may be subject to social desirability bias, particularly on questions touching on institutional performance and corruption. Third, purposive facility selection, while deliberate, limits random generalisability beyond the study sites. Fourth, the three-point response scale lacks the granularity of Likert-type instruments, potentially compressing within-category variation. Fifth, all data were collected from healthcare workers; community member perspectives on DRF engagement were not directly captured and should be the focus of future qualitative research.

5. Conclusions:

This study provides the first quantitative, multi-facility characterisation of health financing patterns, DRF utilisation, gains, and community engagement in Bayelsa State, Nigeria. Findings document a financing architecture dominated by general tax revenues, characterised by significant inter-facility inequity, and constrained by low DRF utilisation, limited gains, and chronically inadequate community engagement. A statistically significant moderate-to-large relationship between financing source and healthcare service quality further confirms that how health resources are mobilised - not merely how much - determines outcomes at the facility level.

Recommendation/ or Implications for Practice and Policy

Addressing these challenges requires coordinated, multi-level action across five domains:

- Health insurance expansion: Scale up enrolment in the National Health Insurance Authority scheme, prioritising informal sector workers and riverine communities through CBHI and mobile enrollment platforms.
- DRF capitalisation and governance: Establish and sustain state-level seed funding with ring-fenced allocations; deploy electronic inventory management systems to improve stock tracking, accountability, and anti-corruption controls.
- Community mobilisation: Leverage Community Development Committees, traditional leadership, and religious institutions as trusted DRF

ambassadors; implement social audits and community health committees to rebuild institutional trust.

- Transparency and accountability: Publish quarterly health expenditure reports; conduct independent DRF audits; create grievance redress mechanisms accessible to community members.
- Future research: Longitudinal and qualitative designs should examine how financing reforms translate into DRF sustainability and health outcomes; equity analyses should assess differential impacts on gender, geography, and socioeconomic strata.

Realising the transformative potential of the DRF for Bayelsa State's population - particularly its most marginalised and geographically isolated communities - demands political commitment, fiscal stewardship, and genuine community partnership.

Declarations :

Acknowledgment

There was no conflict of interest among the authors. The researchers appreciated the statistician, participants, research assistance and researchers for the time.

Conflict of Interest :

The Researchers declare that there was no conflict of interest.

References:

1. Global Burden of Disease Health Financing Collaborator Network. Past, present, and future of global health financing: a review of development assistance, government, out-of-pocket, and other private spending on health for 195 countries, 1995–2050. Lancet. 2019;393(10187):2233–2360. ***View at Google Scholar | View at Publisher***
2. Derkyi-Kwarteng ANC, Agyepong IA, Enyimayew N, Gilson L. A narrative synthesis review of out-of-pocket payments for health services under insurance regimes. Int J Health Policy Manag. 2021;10(7):443–461. ***View at Google Scholar | View at Publisher***
3. Ebegbulem JC. Environmental degradation and its effects on the socio-economic status of residents in the Niger Delta region. Niger Delta Res J. 2018;14(1):67–78. ***View at Google Scholar | View at Publisher***
4. Federal Ministry of Health. Revised National Health Policy. Abuja: Federal Ministry of Health; 2004. ***View at Google Scholar | View at Publisher***
5. Cross PN, Huff MA, Quick JD, Bates JA. Revolving drug funds: conducting business in the public sector. Soc Sci Med. 1986;22(3):335–43. ***View at Google Scholar | View at Publisher***
6. Ali GK. How to establish a successful revolving drug fund: the experience of Khartoum State in the Sudan. Bull World Health Organ. 2009;87(2):139–42. *https://doi.org/10.2471/BLT.07.048561* ***View at Google Scholar | View at Publisher***
7. Ohaju-Obodo JO, Ighedosa SA, Asalu RI, Okoli AA, Omokhafe O. An evaluation of the Drug Revolving Fund scheme in Nigeria: two decades after its adoption. 2022. *https://orcid.org/0000-0002-9904-0752* ***View at Google Scholar | View at Publisher***
8. Chukwunedu C. FG allocates N1.3 trillion to Nigeria's health sector. Nairametrics. 2024 Feb 1. *https://doi.org/10.1080/16549716.2025.2581456* ***View at Google Scholar | View at Publisher***
9. Onwujekwe O, Mbachu C, Ezenwaka U, Arize I, Ezumah N. Characteristics and effects of multiple and mixed funding flows to public healthcare facilities on financing outcomes: a case study from Nigeria. Front Public Health. 2020;7:403. *https://doi.org/10.3389/fpubh.2019.00403* ***View at Google Scholar | View at Publisher***
10. Onoka CA, Hanson K, Hanefeld J. Towards universal coverage: a policy analysis of the development of the National Health Insurance Scheme in Nigeria. Health Policy Plan. 2015;30(9):1105–1117. *https://doi.org/10.1093/heapol/czu116* ***View at Google Scholar | View at Publisher***
11. Laar A, Asare M, Dalinjong PA. What alternative and innovative domestic methods of healthcare financing can be explored to fix the current claims reimbursement challenges? Cost Eff Resour Alloc. 2021;19:69. ***View at Google Scholar | View at Publisher***
12. Rostampour M, Nosratnejad S. A systematic review of equity in healthcare financing in low- and middle-income countries. Value Health Reg Issues. 2020;21:133–140. ***View at Google Scholar | View at Publisher***
13. Uzochukwu BS, Onwujekwe OE, Akpala CO. Effect of the Bamako-Initiative drug revolving fund on availability and rational use of essential drugs in primary health care facilities in south-east Nigeria. Health Policy Plan. 2002;17(4):378–383. *https://doi.org/10.1093/heapol/17.4.378* ***View at Google Scholar | View at Publisher***
14. Witter S. Achieving sustainability, quality, and access: lessons from the world's largest revolving drug fund in Khartoum. East Mediterr Health J. 2007;13(6):1476–1485. ***View at Google Scholar | View at Publisher***
15. Murakami H, Phommasack B, Oula R, Sinxomphou S. Revolving drug funds at front-line health facilities in Vientiane, Lao PDR. Health Policy Plan. 2001;16:98–106. *https://doi.org/10.1093/heapol/16.1.98* ***View at Google Scholar | View at Publisher***
16. Ogbonna OB, Nwako NC. Essential drugs revolving fund scheme in Nigeria: from the edge of a precipice towards sustainability. J Adv Med Pharm Sci. 2016;8(2):1–8. ***View at Google Scholar | View at Publisher***
17. Uzochukwu B, Onwujekwe O. Healthcare reform involving the introduction of user fees and drug revolving funds: influence on health workers'

behaviour in southeast Nigeria. Health Policy. 2005;75(1):1–8.
View at Google Scholar | View at Publisher

18. Archibong P, Ogana F, Edet F, Enamhe C. Health care financing and services utilization in Cross River State, Nigeria. Glob J Soc Sci. 2023;22:9–24. *https://doi.org/10.4314/gjss.v22i1.2*
View at Google Scholar | View at Publisher
19. Karpyshyn N, Zhukevich S. OECD and Ukraine: trends in health care financing. 2023;254–267. *https://doi.org/10.29038/2524-2679-2023-01-254-267*
View at Google Scholar | View at Publisher
20. Liaropoulos L, Goranitis I. Health care financing and the sustainability of health systems. Int J Equity Health. 2015;14:80.
View at Google Scholar | View at Publisher
21. Reeves A, Gourtsoyannis Y, Basu S, McCoy D, McKee M, Stuckler D. Financing universal health coverage-effects of alternative tax structures on public health systems: cross-national modelling in 89 LMICs. Lancet. 2015;386(9990):274–280.
View at Google Scholar | View at Publisher