

Financing Adequacy and Distributional Inequality in Primary Health Care: Facility- and Local Government-Level Evidence from Imo State, Nigeria

Akakuru Kingsley Ogbonnaya¹, Ibe, S. N.², Chinedu-Eleonu P. O³

¹ Imo State Primary Healthcare Development Agency/Imo State University

²Department of Public Health, School of Health Technology, Federal University of Technology,
Owerri Imo State Nigeria

³Imo State University

Corresponding Author: Akakuru Kingsley Ogbonnaya

Email: kingsleyakakuru@gmail.com | +2348037604313

Received: 01.10.2026 | Revised: 15.10.2026 | Accepted: 27.10.2026

Abstract

Background: Increasing primary health care (PHC) financing does not necessarily ensure sufficient resources at service-delivery points or an equitable distribution of funds.

Objective: This study examined recorded budget coverage and financing dispersion across PHC facilities and local government areas (LGAs) in Imo State, Nigeria, during 2020–2024.

Methods: A retrospective descriptive analysis was undertaken using administrative financing records for 304 facilities across all 27 LGAs. Verified receipts were compared with recorded facility budgets, and funding distributions were summarised using totals, per-facility averages, coefficients of variation (CVs) and Gini coefficients.

Results: Verified receipts represented 15.36% of recorded facility budgets in 2020, 96.86% in 2021 and 58.51% in 2022. Ratios exceeded 100% in 2023 and 2024. Across 2020–2024, recorded receipts totalled ₦1.21959 billion. Financing was more dispersed across individual facilities (CV 50.62%; Gini 0.264) than across LGA aggregates (CV 22.39%; Gini 0.124).

Conclusions: Administrative records reveal substantial temporal instability in budget coverage and greater dispersion at facility level. However, recorded budgets are not validated measures of service-delivery requirements, and funding inequality cannot establish inequity without population, workload and need indicators. Government should shift from allocation-based assessments of funding equity to needs-adjusted assessments of resource adequacy and distributional fairness..

Keywords: *primary health care; health financing; budget coverage; distributional inequality; local government; Nigeria*

Cite as: Akakuru, K. O., Ibe, S. N., & Chinedu-Eleonu, P. O. (2026). Financing adequacy and distributional inequality in primary health care: Facility- and local government-level evidence from Imo State, Nigeria. *International Journal of Health, Psychology and Human Development*. Greenresearch Publishing. <https://greenresearchng.com/view/GR88843645>

1. Introduction

The distinction between financing commitments and resources available at the point of care is central to interpreting health system performance. Appropriations represent authorisation to spend, whereas disbursements describe funds released through administrative channels and receipts indicate resources recorded as reaching facilities. These quantities need not coincide within the same financial year. Timing differences, pooled programme transfers and expenditure managed above the facility level may produce substantial divergence even where financial controls are functioning. For this reason, a facility-level analysis offers a different perspective from conventional studies that examine aggregate health budgets. It can identify where the financing chain becomes difficult to reconcile, although the existence of a discrepancy does not by itself demonstrate diversion or misuse of funds. The subnational focus is also analytically important because the unit at which money is aggregated can alter the apparent pattern of distribution. A local government area with many facilities may report a relatively large total receipt without providing more resources to the typical facility. Conversely, a smaller jurisdiction may appear poorly funded in aggregate while reporting comparatively high receipts per facility. Neither ranking establishes fairness without considering the size and characteristics of the population served, the mix of services, staffing obligations, facility condition and geographic barriers to care. This present study therefore treats adequacy and equity as related but non-interchangeable dimensions of financing performance, and uses the available administrative data to identify the claims that can and cannot be sustained.

Primary health care (PHC) financing is central to universal health coverage because it determines whether frontline facilities can maintain essential medicines, personnel, equipment and routine services. Yet the amount committed to PHC is analytically distinct from the amount received by facilities, and neither necessarily indicates whether the resources are sufficient for the services expected of them. The financing pathway—from budget approval through release, transfer and facility-level receipt—can be affected by fragmented institutional responsibilities, delayed disbursement and weak accountability (Agwu et al., 2026; Alawode & Adewole, 2021). A credible subnational assessment must therefore distinguish nominal resource availability, budget coverage, operational adequacy and distributional equity rather than treating these concepts as interchangeable. Equity introduces a further challenge. Equal grants to facilities may be inequitable when catchment populations, remoteness, disease burdens, infrastructure and service workloads differ. Conversely, unequal receipts do not necessarily constitute unfair allocation: facilities with greater legitimate needs may appropriately receive more. Existing Nigerian studies describe variations in PHC functionality, geographic accessibility and governance arrangements (Abubakar, 2021; Ezenwaka et al., 2022; Sampson et al., 2024). Evidence on facility financing is particularly useful when examined at more than one administrative level, since relatively even LGA totals can coexist with large differences among facilities within those LGAs. The Basic Health Care Provision Fund and other financing streams make this issue especially important, as facility budget records may not capture all programme-based receipts. Imo State offers a relevant case for examining these measurement and distributional issues. The present study analyses administrative records for 304 PHC facilities located across its 27 LGAs over 2020–2024. Its contribution is deliberately bounded: it evaluates the correspondence between verified receipts and recorded budgets and describes the concentration of financing across

facilities and LGAs. Because consistent population, utilisation and facility-need measures were unavailable, it does not claim to identify need-adjusted equity or the full cost adequacy of service delivery. This distinction is substantive rather than merely terminological: allocation reform cannot be assessed reliably until funding data are linked to independently measured service requirements.

Aim and Objectives of the Study

This study aimed to assess recorded budget coverage and the distribution of PHC financing across facilities and LGAs in Imo State, Nigeria, from 2020 to 2024.

The specific objectives were to:

1. Quantify the correspondence between verified PHC facility receipts and recorded facility budgets across the study period.
2. Describe financing dispersion across facilities and LGAs and identify the additional information required for a need-adjusted equity assessment.

Research Questions

1. How did verified PHC facility receipts compare with recorded facility budgets from 2020 to 2024?
2. How did financing vary across facilities and LGAs, and what can these patterns establish about distributional inequality?

Analytical scope

This study is descriptive. No inferential hypothesis about adequacy differences was tested because budget entries were not validated as costed service requirements and the necessary inferential estimates were not reported. Associations between financing and population, service utilisation or facility need were not tested because consistent measures of these variables were unavailable. Accordingly, claims about need-adjusted equity are outside the empirical scope.

2. Literature Review

2.1 Conceptualising Primary Health Care Financing Adequacy and Equity

Adequacy may be assessed against at least three different benchmarks: an approved budget, a minimum service-delivery costing standard or a needs-based estimate of the resources required to deliver an agreed package of care. A receipts-to-budget ratio addresses the first benchmark only. It does not establish whether the budget itself was sufficiently costed, whether staff salaries or in-kind supplies were financed outside the recorded facility account, or whether inflation reduced the purchasing power of transfers. Where the budget denominator omits pooled or programme funding that is subsequently recorded among receipts, a ratio greater than 100% is not evidence that the facility received more than it needed. Rather, it signals that the two administrative fields may not be defined on a comparable basis. Equity requires an explicit normative reference. Horizontal equity implies comparable financing for facilities or populations with comparable needs, while vertical equity permits or requires greater resources where needs and costs are greater. Equal amounts per facility may therefore be inequitable if some facilities serve larger or poorer catchment populations or face higher delivery costs. The Gini coefficient summarises the concentration of recorded financial receipts, but it is insensitive to the legitimacy of observed differences. A higher Gini coefficient can reflect unequal need, uneven programme eligibility, different facility mandates or inequitable allocation. Without linked need indicators, the appropriate description is distributional inequality, not demonstrated inequity.

PHC financing comprises resource mobilisation, pooling, allocation, transfer and use. Four measures should be distinguished. Budget allocation is an authorised financial plan; verified receipt is the amount recorded as reaching a facility; budget coverage is the ratio of verified receipts to the corresponding recorded budget; and operational adequacy requires comparison with an independently established, costed package of services. A budget-coverage ratio below 100% indicates receipts below the recorded budget, but cannot by itself establish underfunding against clinical needs. Similarly, a ratio above 100% does not prove excess funding when the budget and receipt records have different coverage. Distributional inequality refers to differences in amounts received, whereas horizontal and vertical equity require comparisons among facilities with similar and different needs, respectively. A Gini coefficient is useful for describing concentration, not for judging fairness in the absence of a defensible needs benchmark (Abubakar, 2021; Odunyemi, 2021).

2.2 Principal Agent Theory

Applied to the financing chain, principal–agent theory identifies several potential information gaps: higher-level funders may not observe the timing and completeness of local transfers; programme managers may have limited visibility over facility-level expenditure; and communities may be unable to verify whether authorised allocations reach providers. These gaps create a rationale for transparent financial reporting, auditable transfer identifiers and feedback mechanisms. However, the framework should not be used to infer misconduct from differences between budgets and receipts. Accounting boundaries, decentralised responsibilities, administrative capacity and genuine differences in service need provide alternative explanations that require empirical investigation. The present dataset supports an assessment of recorded financing patterns, rather than a direct test of agent incentives, corruption or the causal effect of governance arrangements. Principal–agent theory provides one explanation for why budget commitments and facility receipts may diverge. State authorities, implementing agencies, local governments and facility managers have different responsibilities, information and incentives, potentially generating monitoring problems and delays. Evidence from Nigerian subnational health financing illustrates the importance of institutional ownership and accountability (Ezenwaka et al., 2022; Agwu et al., 2026). However, principal–agent theory cannot by itself explain the appropriate distribution of funding: legitimate variation in population, service workload, geography and facility readiness also matters. The conceptual framework in Figure 1 is therefore interpreted as a set of plausible pathways linking financing sources, governance, transfers and service capacity—not as a causal model tested by the present descriptive analysis.

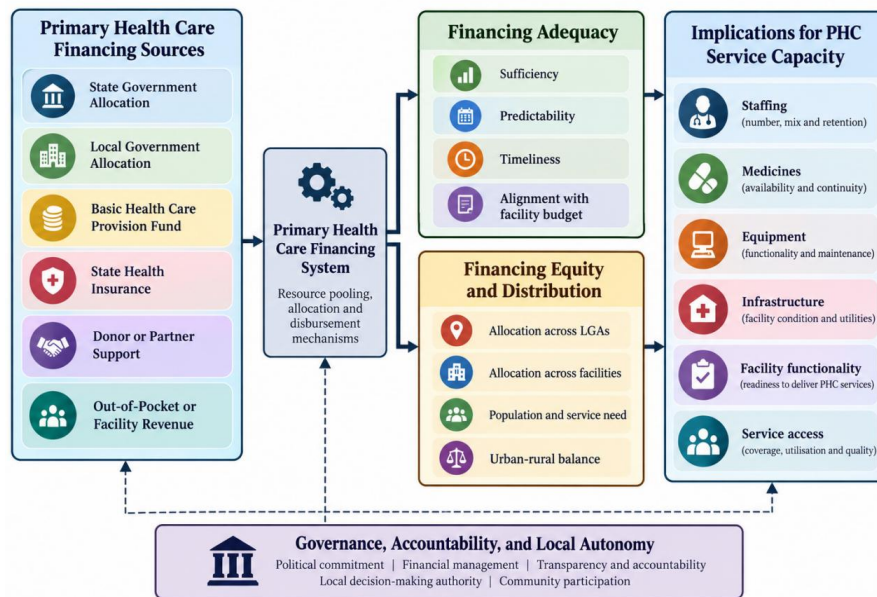


Figure 1: Conceptual Framework for Assessing PHC Financing Adequacy and Equity

2.3 Review of Previous Studies

The reviewed literature addresses complementary but distinct outcomes. Research on governance identifies institutional conditions that may affect fund flows, while studies of technical efficiency examine the transformation of inputs into outputs. Work on facility functionality considers whether service delivery requirements are met, and spatial studies describe differences in geographic access. These perspectives should not be treated as interchangeable measures of financing adequacy. A technically efficient facility may remain under-resourced; a fully functioning facility may receive substantially more funds because it serves a larger population; and a geographically remote facility may require a higher allocation to deliver the same minimum service package. The distinctive value of the present analysis is its simultaneous description of recorded budget coverage and financing dispersion at two administrative levels, with explicit acknowledgement that neither measure alone resolves the question of need-adjusted equity. Recent Nigerian PHC scholarship addresses complementary but distinct dimensions of financing performance. Agwu et al. (2026) emphasise accountability and governance constraints; these mechanisms may affect transfers and utilisation but are not directly measured here. Their relevance is therefore explanatory rather than evidentiary proof of the causes of the observed budget–receipt gaps. Nwaze et al. (2026) examine PHC functionality under the Basic Health Care Provision Fund in Ebonyi State. Facility functionality is an important downstream outcome, but this study does not link its financing records to service-readiness or quality measures. Differences in funding should consequently not be interpreted as differences in facility performance. Oluwatola et al. (2026) consider technical efficiency in PHC facilities. Technical efficiency—the transformation of inputs into outputs—differs from both funding sufficiency and distributional equity. A facility can operate efficiently while remaining under-resourced; equally, higher funding does not establish efficient resource use. The present analysis makes no technical-efficiency claim. Geospatial and urban–rural studies, including Abubakar (2021) and Tinimoye et al. (2026), show why facility financing should be interpreted in relation to accessibility and local service demand. Yet the available Imo State financing records do not contain consistently linked catchment populations or travel barriers.

These contextual dimensions inform recommendations for subsequent analysis rather than findings of this study. Research on decentralised health governance (Alawode & Adewole, 2021; Ezenwaka et al., 2022) highlights the importance of institutional responsibilities for programme implementation. Taken together, this literature motivates a two-level descriptive account of PHC financing while underscoring the need to avoid equating observed financial dispersion with unfairness.

2.4 Research Gap

An additional measurement gap concerns the reconciliation of facility-level budgets with multiple financing streams. Where administrative records capture different components of the financing system, conventional execution ratios may become difficult to interpret across years. This issue matters for comparisons because an apparent improvement in budget coverage could result from changes in reporting completeness rather than improved resource availability. A useful empirical contribution is therefore to make the comparability problem visible, describe the distribution of recorded receipts, and specify the supplementary data required to progress from descriptive monitoring to a defensible assessment of economic adequacy and equitable allocation. The specific evidence gap addressed here is the limited visibility of verified PHC financing at both facility and LGA levels over time. By distinguishing recorded budget coverage from actual resource adequacy and financing dispersion from need-adjusted equity, the study offers a more transparent description of what existing administrative accounts can—and cannot—establish. Its original contribution is an empirically bounded multilevel financing profile for Imo State, rather than a definitive test of equitable allocation.

3. Materials and Methods

The unit of observation for the distributional analysis was the recorded facility, with facilities grouped by local government area. The five-year study window was 2020–2024. The reported facility count refers to facilities represented in the administrative financing records; it should not automatically be interpreted as a verified census of every operational primary healthcare facility in the state. Receipt totals were aggregated from the available financing-source fields after checking for duplicated or summary entries, and local government totals were obtained by summing facility-level receipts. Descriptive comparisons were undertaken using the same nominal currency units throughout. Because facility-year completeness and the detailed variable dictionary are not presented in the manuscript, the results should be interpreted as summaries of the eligible administrative records rather than as estimates from a fully documented balanced panel. The receipt-to-recorded-budget ratio was calculated as total verified receipts divided by the corresponding recorded facility budget, multiplied by 100. This ratio is described as budget coverage rather than a direct measure of economic adequacy. For distributional comparisons, the coefficient of variation expresses the standard deviation relative to the mean, while the Gini coefficient provides a scale-independent summary of the concentration of recorded receipts. Both statistics depend on the unit of analysis and the treatment of zero or missing records. Consequently, facility-level and local-government-level estimates answer different questions: the former describe variation between facilities and the latter describe variation between jurisdictional aggregates. Neither can establish whether a particular allocation was proportionate to health need.

The study was descriptive and did not estimate causal effects. The hypotheses stated in the initial framing cannot be considered statistically tested by the reported descriptive statistics alone. Formal inference would require the underlying observation-level dataset, a prespecified test, a defensible treatment of repeated measurements and suitable measures of population, utilisation and need. No p-values or confidence intervals are introduced here because they cannot be reconstructed from the reported aggregates. A reproducible future analysis should document the precise definition of each funding source, coverage by facility and year, zero-value coding, currency denomination, and the procedure used to reconcile annual financial totals.

A retrospective, descriptive longitudinal design was used to examine administrative PHC financing records for 2020–2024 in Imo State, southeastern Nigeria. The unit of reporting was the facility, with aggregation to the LGA level. The analytical sample comprised 304 facilities with financing records across all 27 LGAs; this represents a census of eligible recorded facilities, not necessarily every operational PHC facility in the state. The analysis concerns recorded financial flows and does not evaluate patient outcomes, facility service quality or causal effects of financing.

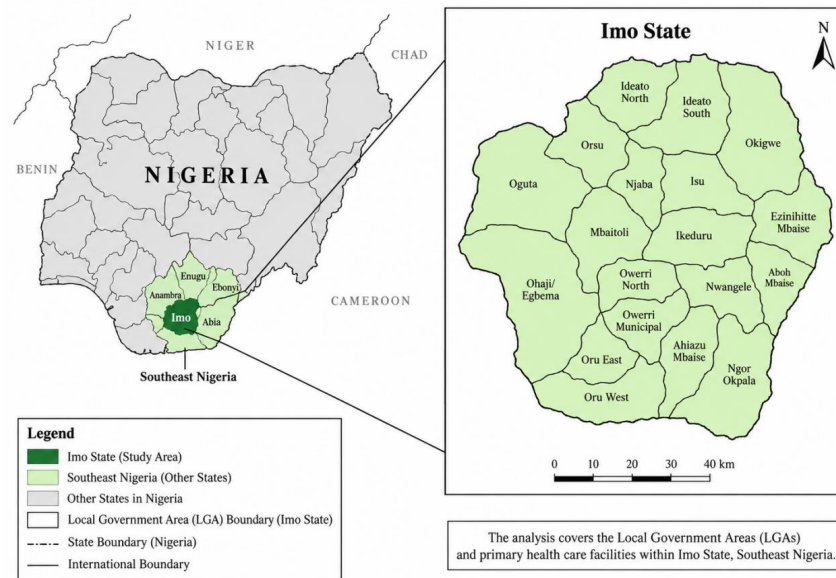


Figure 2: Study Area: Imo State, Southeast Nigeria

The dataset contained facility identifiers, LGA identifiers, annual recorded budgets, verified receipts and financing-source information. Facility and LGA identifiers were standardised; summary rows and duplicates were reviewed; and annual receipt totals were reconstructed from the underlying financing fields. Missing values were not imputed. The available manuscript does not provide the numbers of records affected by each cleaning operation or a complete data dictionary; these should be documented before submission to support reproducibility. Figure 2 locates the study area, while Figure 3 summarises the descriptive analytical workflow.

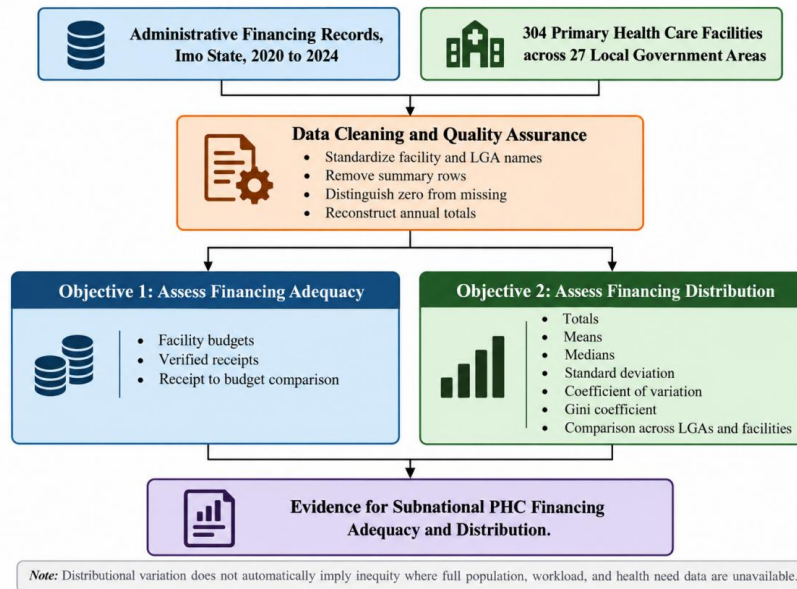


Figure 3: Analytical Framework for the Assessment of PHC Financing

For year t , the recorded budget-coverage ratio was defined as $100 \times (\text{sum of verified facility receipts in year } t) / (\text{sum of corresponding recorded facility budgets in year } t)$. It is a descriptive accounting ratio, not an independently costed adequacy measure. LGA financing totals were obtained by summing receipts across facilities in each LGA; average financing per facility was the LGA total divided by the number of recorded facilities in that LGA. Dispersion was described using the coefficient of variation ($100 \times \text{standard deviation}/\text{mean}$) and the Gini coefficient (0 indicating equality of recorded amounts and 1 maximal concentration under the usual nonnegative-data convention). The Gini and CV values were reported at their respective aggregation levels and must not be interpreted as need-adjusted equity indices. All monetary amounts were nominal; no inflation adjustment or population weighting was applied. Administrative permissions and ethical authorisation are reported in the source manuscript, but the approving body and approval identifier should be supplied for publication.

4. Results

4.1 Adequacy of Primary Health Care Financing

In 2020, the low ratio and zero median facility receipt indicate that the available records show limited financing reaching many facilities. The marked improvement in the recorded ratio in 2021 and subsequent reduction in 2022 point to instability in the relationship between budget entries and receipts. However, the 2023 and 2024 ratios are affected by incomplete alignment between the recorded budget field and pooled or programme receipts. These years cannot be ranked against earlier years as though every observation represented an identical budget-execution concept. Changes in inflation and service costs also mean that nominal receipts cannot reveal whether purchasing power improved. In 2020, recorded facility budgets totalled ₦49.38 million and verified receipts ₦7.59 million, yielding a budget-coverage ratio of 15.36% and a recorded difference of ₦41.79 million. Positive receipts were recorded for 35.86% of facilities, and the median facility receipt was zero. In 2021, receipts of ₦95.79 million were recorded against budgets of ₦98.90 million (96.86%). In 2022, receipts of ₦58.80 million were recorded against budgets of ₦100.50 million

(58.51%). These are accounting comparisons against recorded budget entries; the data do not establish the cost of providing an adequate PHC service package. In 2023 and 2024, the reported receipt-to-budget ratios were 165.63% and 236.63%, respectively. These values should not be interpreted as evidence of overfunding or exceptional budget execution: pooled and programme receipts were not consistently represented in the facility budget fields. The mismatch in the scope of the numerator and denominator limits year-to-year comparability and is a central finding about administrative reporting quality. A harmonised reconciliation of funding streams is required before interpreting these ratios as implementation performance.

4.2 Distribution of Financing across Local Government Areas and Facilities

The difference between jurisdictional totals and per-facility averages illustrates why reporting a single ranking can be misleading. Okigwe recorded the largest cumulative LGA receipt, whereas Onuimo recorded the highest reported average per facility. Owerri Municipal, despite its comparatively low aggregate total, also had a relatively high average per facility. These rankings are not contradictory: they reflect different denominators. Similarly, the higher facility-level coefficient of variation and Gini coefficient indicate greater dispersion when individual facilities are the units being compared. This does not mean that the difference between the two Gini values is itself a statistically significant result, nor does it demonstrate that the higher-dispersion level is less equitable. Such conclusions would require facility-specific service responsibilities and needs data. Verified receipts summed to ₦1.21959 billion over 2020–2024. Okigwe LGA recorded the largest aggregate amount (₦66.33 million), whereas Owerri Municipal recorded the smallest (₦29.34 million). Ranking changed when totals were divided by the number of recorded facilities: Onuimo averaged ₦6.05 million per facility, Okigwe ₦6.03 million and Owerri Municipal ₦5.87 million, while Ideato North averaged ₦2.17 million. These averages do not account for catchment population, facility type, service workload or cost differences. The reported LGA-level CV was 22.39% and Gini coefficient 0.124, compared with 50.62% and 0.264, respectively, at facility level. Financing amounts were thus more dispersed among facilities than among LGA aggregates under the reported definitions. This is evidence of distributional inequality, not proof of inequitable allocation. Without comparable measures of service need and financing obligations, it is not possible to determine whether larger receipts were justified, insufficient or excessive.

4.3 Discussion of Findings

A central interpretation is that the financing system cannot be evaluated adequately through either annual nominal totals or a single dispersion statistic. Budget coverage is sensitive to the completeness and compatibility of administrative reporting fields, while distributional measures are sensitive to the choice of aggregation unit. Taken together, the findings support a practical governance agenda focused on improving the quality and linkability of financial records before making stronger claims about allocative performance. They also challenge the assumption that an increase in reported receipts necessarily implies greater service readiness, because the analysis does not include stock availability, staffing, service quality or patient outcomes. The policy significance extends beyond Imo State but should not be overstated. This study provides a detailed illustration of the analytical problems that may arise in decentralised health financing, rather than direct evidence that the same pattern exists throughout Southeast Nigeria. Comparable studies in other states would need

harmonised accounting definitions, consistent facility identifiers and common need indicators. Such comparability would allow researchers to distinguish differences attributable to programme architecture from those associated with population pressure, facility characteristics or implementation practices. Until those data are available, the strongest inference is that observed financing dispersion and incomplete budget reconciliation warrant targeted administrative investigation. The temporal results expose two different challenges: recorded receipts fell substantially below budget entries in some years, while the later-year ratios became difficult to interpret because budget and receipt categories were not harmonised. Neither observation alone establishes whether facilities had sufficient funds for essential PHC functions. A costed service-delivery standard would be needed to estimate adequacy; budget–receipt reconciliation is a necessary prior accounting step. The distinction matters for interpretation of financing reforms. Studies of PHC governance, functionality and efficiency in Nigeria suggest plausible mechanisms through which financing arrangements could influence service readiness (Agwu et al., 2026; Nwaze et al., 2026; Oluwatola et al., 2026). The present records do not identify those mechanisms empirically. Their value lies in revealing where financial reporting and allocation analysis require greater resolution. The higher facility-level dispersion indicates that LGA aggregates may conceal meaningful differences in receipts among frontline providers. Nevertheless, the two aggregation levels contain different numbers and types of units; differences between their inequality statistics should be interpreted descriptively, not as a statistical test or a causal effect of administrative structure. Differences in facility size and service responsibilities could account for some of the observed variation. A needs-sensitive interpretation would link facility receipts to catchment population, poverty, remoteness, utilisation, facility type and minimum service-delivery costs. Such data would permit comparisons of per-capita and workload-adjusted financing and assessment of whether higher-need facilities receive proportionately greater resources. Until these measures are available, the evidence supports transparency and measurement reform more strongly than any specific claim of discriminatory allocation.

5. Contribution to Knowledge

This study also contributes a measurement-oriented lesson: financing adequacy and distributional equity should be evaluated as a linked sequence of questions rather than reduced to one composite statistic. First, investigators should establish what resources were budgeted and received and whether the records describe comparable financing streams. Second, they should quantify how receipts vary across facilities and jurisdictions. Third, they should assess the extent to which these differences align with population size, service demand and the costs of delivering a minimum package of care. This staged approach is especially relevant where administrative data are available but need indicators are incomplete, because it allows useful descriptive evidence to be reported without presenting unmeasured dimensions as established findings. This study demonstrates why a receipt-to-budget ratio must not be labelled operational adequacy without an independently costed benchmark and consistent accounting coverage. It provides a two-level profile showing that facility-level financing dispersion can be substantially greater than dispersion among LGA aggregates. It identifies the data infrastructure needed to move from descriptive inequality to defensible needs-adjusted equity analysis. These contributions are

methodological and policy-relevant, while remaining limited to the observed Imo State records.

6. Limitations of the Study

Further limitations arise from the absence of detailed facility-year completeness information and independently verified service-cost benchmarks. The administrative records cannot distinguish a genuine zero receipt from an unrecorded transfer unless the source documentation provides an explicit coding rule. Likewise, this study does not establish whether reported receipts were unrestricted operating grants, earmarked programme transfers or funds tied to specific inputs. These distinctions affect comparability between facilities. The analysis also does not identify the precise amount of in-kind support, salary expenditure or centrally procured supplies that may have benefited facilities without appearing in their receipt fields. Accordingly, its findings should not be generalised to total public resource use at the facility level. Several limitations constrain interpretation. The 304 facilities are those with eligible administrative records, and completeness relative to all operational facilities was not independently established. Budget entries did not consistently capture all financing streams, particularly in 2023–2024, limiting the interpretation of coverage ratios. Financial amounts were nominal, with no adjustment for inflation or changes in purchasing power. Facility-level need, catchment population, service utilisation, geographic access, staffing and infrastructure condition were not consistently available. The study therefore cannot estimate true resource adequacy, needs-adjusted equity, technical efficiency or effects on health outcomes. Data-cleaning counts, uncertainty estimates and source-specific reconciliation schedules were not available in the supplied manuscript. These limitations should be explicitly addressed in any subsequent data release or expanded analysis.

7. Conclusion, Implications and Recommendations

A feasible first reform is to establish a standard annual facility-financing statement that separately identifies approved budgets, revised budgets, cash releases, verified receipts, in-kind support and externally managed programme expenditure. Each transfer should be traceable to a facility identifier and fiscal year, and reconciliation should explicitly explain differences between facility budgets and programme receipts. This would improve the interpretability of budget-coverage indicators and permit more credible comparisons over time. A second reform is to complement basic facility grants with a transparent needs-sensitive allocation formula. Relevant components could include catchment population, utilisation, poverty, geographic remoteness, service package and infrastructure deficits, with weights agreed through a documented policy process and periodically reviewed. Implementation should be accompanied by monitoring indicators that can be audited: the proportion of facilities submitting complete financial statements, the share of transfers reconciled to source records, timeliness of fund release, and the proportion of allocations accompanied by current population and workload information. Public reporting should present both LGA totals and facility-level distributions, alongside the relevant denominators. A phased pilot would allow authorities to test whether the proposed reporting arrangements are administratively feasible before using the information to redistribute resources. These recommendations follow from the measurement and distributional limitations identified in the study; they are policy proposals, not interventions whose effectiveness has been established by the present data.

The financing records of 304 PHC facilities across Imo State reveal substantial year-to-year variation in recorded budget coverage and greater dispersion among facilities than among LGA aggregates. These findings should be understood as evidence about recorded receipts and their distribution, not as definitive estimates of financing adequacy or unfair allocation. Three policy actions follow. First, the state PHC authorities should adopt a harmonised facility-level chart of accounts that reconciles approved budgets, releases, pooled programme funds and verified receipts by funding source and year. Second, financing reports should be linked to facility identifiers, catchment populations, service volumes, staffing, geographic disadvantage and costed minimum service packages. Third, allocation rules should be transparently reviewed using a basic facility grant plus explicitly justified need and workload adjustments, with periodic publication of the resulting allocations and disbursements. These steps would make future assessments of both sufficiency and equity more credible and actionable.

8. Suggestions for Future Research

Future studies should integrate facility-level financial records with population, utilisation, poverty, remoteness, infrastructure and staffing indicators, and deflate monetary series using a stated and defensible price index. A prospective costing study of a minimum PHC service package would permit a direct adequacy assessment. With sufficiently complete data, investigators could estimate need-adjusted allocations, examine within-LGA disparities and compare financing patterns across southeastern states. Evaluations linking financing changes to service readiness and utilisation would additionally clarify whether improved allocation translates into better care.

REFERENCES

- Abubakar, E. O. (2021). Socio-spatial analysis of small-area need and accessibility of primary healthcare services in Nigeria: A sequential mixed methods study (Doctoral dissertation, Newcastle University).
- Agwu, P., Orjiakor, C., Odii, A., Ogbozor, P., Hutchinson, E., McKee, M., ... & Balabanova, D. (2026). Poor accountability and corruption in primary healthcare in Nigeria: Subnational governance deficiencies matter. *Health Systems & Reform*, 12(1), 2630426.
- Akinwumi, A. I., OlaOlorun, A. D., Adesina, S. A., Durodola, A. O., Amole, I. O., Singer, S. R., & Levine, H. (2022). Strong primary care services, an important feature of primary health care: What can Nigeria learn from Israel?. *Frontiers in Public Health*, 10, 1006095.
- Alawode, G. B., Ajibola, A. R. A., Afolabi, O. R., Nkwain, C., & Alawode, K. A. (2026). An enabler or a barrier: implications of local government autonomy for effective primary health care (PHC) reforms in Nigeria. *The Pan African Medical Journal*, 53, 30.
- Alawode, G. O., & Adewole, D. A. (2021). Assessment of the design and implementation challenges of the National Health Insurance Scheme in Nigeria: a qualitative study among sub-national level actors, healthcare and insurance providers. *BMC Public Health*, 21(1), 124.
- Ezenwaka, U., & Onyemaechi, S. (2026). Analyzing governance of a sub-national health insurance scheme for providing universal health care and better social health protection performance through the lenses of the principal-agent theory in Anambra state. *BMC Health Services Research*, 26(1), 747.
- Ezenwaka, U., Abimbola, S., & Onwujekwe, O. (2022). How (not) to promote sub-national ownership of national initiatives in decentralised health systems: The free maternal and child health programme in Nigeria, 2008–2015. *The International Journal of Health Planning and Management*, 37(6), 3192-3204.
- Igechi, O. G., Efanodor-Obeten, H. O., & Atoe, K. (2025). The politics of healthcare in Nigeria: an analysis of policy implementation and outcomes. *Salus et Scientia*, 1(1), 14-26.
- Justina, N. A., John, A. O., & Obumneke, E. (2026). Donor Disbursement Timeliness and Access to Primary Healthcare in Selected States of North-Central Nigeria. *International Journal of Medical, Molecular and Biological Sciences*, 1(4), 24-39.
- Kolajo, B. F., Olaosebikan, J. O., & Inegbedion, H. (2026). Governance Coordination, Financing Reform, and Equity-Targeted Interventions as Structural Determinants of Health System Performance in Southwest Nigeria: A Convergent Mixed-Methods Study. *The International Journal of Health Planning and Management*, 41(5), 938-949.
- Nwaze, E. O., Ebulum, G. C., Okoude, E. U., & Nwaze, K. N. (2026). Functionality assessment of primary healthcare services in Ebonyi State under the basic healthcare provision fund. *Pyramid Journal of Medicine*, 9(1).
- Odinenu, T., Anago, J. C., & Anago, A. (2026). Healthcare presence or barely there? Unpacking the systemic challenges to the right to health in Nigeria: a scoping review. *Journal of Health Organization and Management*, 1-20.
- Odunyemi, A. E. (2021). The implications of health financing for health access and equity in Nigeria. In *Healthcare access*. IntechOpen.

- Ogunsanwo, S. E., & Olutayo, D. O. (2026). Law Without Compliance: The Collapse of Cooperative Federalism in Nigeria's Primary Health Care System. *International Journal Of Medical And Health Law Practice*, 1(1).
- Olaleru, E. T. (2026). Geospatial Assessment of Health Facilities Distribution and Accessibility in Nigeria: Evidence from the GRID3 National Health Facilities Database.
- Oluwatola, T., Ayodeji, O., Ebinim, H., Omeje, O., Isiaka, S. D., Oni, F., ... & Okagbue, H. I. (2026). Technical efficiency analysis of the Basic Health Care Provision Fund for the funded primary health care facilities in Nigeria. *BMC Primary Care*.
- Sampson, S., Umar, L., Obi-Jeff, C., Oni, F., Ayodeji, O., Ebinim, H., ... & Okagbue, H. (2024). Assessment of the compliance with minimum quality standards by public primary healthcare facilities in Nigeria. *Health Research Policy and Systems*, 22(1), 133.
- Samuel, W. A. (2026). Economic Policy And Public Health Outcomes: Analyzing The Impact Of Government Subsidies On Access To Affordable Healthcare Services In South East Nigeria. *Unizik Journal Of Educational Laws And Leadership Studies*, 5(1).
- Tinimoye, M., Raimi, M. O., & Daberechi, A. (2026). Urban-rural disparities in primary healthcare service delivery and implications for sustainable development goal 3 in Southern Nigeria.
- Yunusa, U., Zakirai, M. S., Yunusa, A., Bello, U. L., Ibrahim, A. H., Mohammed, S., ... & Yunusa, Y. (2026). Nigeria's public health system: A narrative review of key indicators, systemic challenges, and community-based solutions. *Journal of Community Medicine & Primary Health Care*, 38(1), 14-27.