

ROLE OF FINANCIAL MANAGEMENT IN STRENGTHENING EMERGENCY PREPAREDNESS AND DISEASE-OUTBREAK RESPONSE IN PUBLIC HEALTH INSTITUTIONS

Chukwu Dorathy Ifeoma

Department of Financial Management, School of Business

Charisma University, Billings, Montana, USA

Ifeomachukwu202@gmail.com

+2348037409997

Ogbuyeme Jennifer Ngozika (Ass. Prof)

Department of Public Health Sciences, School of Health Sciences

Charisma University, Billings, Montana, USA

Jenny1way@gmail.com

+2348162815163

Ochechi Joseph Ugbede

Department of Public Health Sciences, Faculty of Allied Health

State University of Medical and Applied Sciences, Igbo-Eno

Joseph.ochechi@sumas.edu.ng

+2348063919163

Corresponding Author

Ochechi Joseph Ugbede

Department of Public Health Sciences, Faculty of Allied Health

State University of Medical and Applied Sciences, Igbo-Eno

Joseph.ochechi@sumas.edu.ng

+2348063919163

Abstract

This study examined the role of financial management in strengthening emergency preparedness and disease-outbreak response in public health institutions. The increasing frequency of infectious disease outbreaks has highlighted the need for efficient financial systems capable of supporting rapid response, resource allocation, and sustained preparedness. A cross-sectional survey design was adopted, and data were collected from 287 respondents drawn from selected public health institutions. The study investigated key financial management components including budgeting,

procurement efficiency, financial accountability, and fund allocation, and their influence on emergency preparedness and outbreak response. Data were analyzed using descriptive statistics, correlation analysis, and multiple regression techniques. Findings revealed that financial management practices significantly influence both emergency preparedness and disease-outbreak response in public health institutions. The regression analysis showed that financial management explained 58% of the variation in preparedness and response outcomes. Budgeting and procurement efficiency emerged as the strongest predictors of effective outbreak management. The study also found a strong positive relationship between financial management and emergency preparedness ($r = 0.68$) as well as outbreak response ($r = 0.72$). Despite the presence of preparedness structures, delays in fund release and inefficiencies in financial systems were identified as key constraints to effective response. The study concluded that strengthening financial management systems is essential for improving health system resilience during disease outbreaks. It recommends the establishment of dedicated emergency funds, improved procurement processes, and enhanced financial accountability mechanisms within public health institutions.

Keywords: Financial Management; Emergency Preparedness; Disease-Outbreak Response; Public Health Institutions; Budgeting Efficiency

Introduction

Public health institutions are expected to protect populations before, during and after disease outbreaks through timely surveillance, laboratory confirmation, case management, risk communication, vaccination, infection prevention and control, and continuity of essential health services. However, the effectiveness of these functions depends substantially on the availability, allocation and prudent use of financial resources. Financial management, which involves budgeting, revenue mobilisation, cash-flow planning, expenditure control, procurement, auditing and accountability, provides the institutional foundation for converting emergency plans into practical response actions. During outbreaks, sound financial management enables institutions to release funds rapidly for personnel deployment, diagnostic supplies, medicines, personal protective equipment, transportation, emergency operations and community-based interventions.

Recent global evidence shows that investment in prevention, preparedness and early response is more cost-effective than waiting until an outbreak has escalated into a major emergency. Predictable and flexible financing helps public health institutions sustain surveillance systems, maintain emergency stockpiles, train response teams and strengthen laboratory and logistics capacity before a crisis occurs (Ndembu et al., 2024; World Health Organization [WHO], 2024). Conversely, weak budgeting systems, delayed fund release, poor procurement practices and

inadequate financial accountability may cause shortages of essential commodities and reduce the speed and quality of disease-outbreak response.

In Nigeria, recurrent outbreaks of cholera, Lassa fever, meningitis, diphtheria, Ebola and COVID-19 have demonstrated both the importance of emergency preparedness and the persistent constraints facing public health institutions. Although the country has made progress in surveillance, risk communication and response coordination, inadequate funding, subnational disparities, logistical challenges and weak coordination continue to affect outbreak preparedness and response capacity (Jonah et al., 2024). Recent WHO assessments also indicate gaps in Nigeria's national health-emergency framework, emergency planning, resource mobilisation and financing for the implementation of International Health Regulations capacities (WHO, 2025). These gaps suggest that effective financial management is necessary not only for obtaining funds but also for ensuring that scarce resources are prioritised, transparently managed and directed towards high-impact emergency functions.

The need for financial readiness is further reinforced by the continuing risk of communicable-disease transmission in crowded and poorly regulated social settings. Ugbede (2025) noted that overcrowding, inadequate ventilation and weak hygiene practices in Nigerian football viewing centres may facilitate the spread of infectious diseases such as tuberculosis, influenza and COVID-19. Such risks place additional pressure on public health institutions to maintain rapid-response capacity, including surveillance, health education, emergency supplies and trained personnel. Therefore, this study examines the role of financial management in strengthening emergency preparedness and disease-outbreak response in public health institutions, with emphasis on how efficient planning, budgeting, fund utilisation, procurement and accountability can improve institutional resilience and protect population health.

Statement of the problem

Public health institutions are increasingly confronted with recurrent disease outbreaks that demand rapid, well-coordinated, and adequately resourced responses. However, evidence suggests that many health systems, particularly in low- and middle-income countries, remain constrained not only by clinical and infrastructural limitations but also by weak financial management systems that undermine emergency preparedness and outbreak response capacity (World Health Organization, 2024). Inefficiencies in budgeting, delayed fund disbursement, poor procurement processes, and weak financial accountability continue to affect the timely availability of essential resources such as medicines, laboratory supplies, and emergency logistics during outbreaks.

Recent global health financing analyses highlight that effective preparedness is not determined solely by the volume of funding but also by the efficiency and flexibility of public financial management systems that govern how resources are allocated and utilized during emergencies

(OECD, 2025; WHO, 2025). In many settings, rigid budget structures and fragmented financial governance delay early outbreak response, allowing disease transmission to escalate before interventions are fully deployed (Resolve to Save Lives, 2024). These delays have been identified as a major bottleneck in effective epidemic control, particularly in contexts where rapid containment is critical.

In Nigeria and similar settings, the recurrence of outbreaks such as Lassa fever, cholera, diphtheria, and COVID-19 continues to expose systemic weaknesses in emergency preparedness and health financing structures. Studies indicate that limited domestic financing, weak budget prioritization for health emergencies, and inefficiencies in fund execution significantly weaken the resilience of the health system (Ogunniyi et al., 2025; WHO, 2025). As a result, public health institutions often struggle to sustain surveillance systems, maintain emergency stockpiles, and deploy rapid response teams when outbreaks occur.

Furthermore, the situation is compounded by increasing population density, poor environmental hygiene, and persistent communicable disease risks in communities, which heighten the likelihood of rapid disease transmission. Ugbede (2025) emphasized that overcrowded and poorly regulated social environments significantly increase exposure to infectious diseases, thereby placing additional pressure on already overstretched public health systems. When such contextual risks intersect with weak financial preparedness, the ability of health institutions to respond effectively becomes further compromised.

Against this backdrop, there is a clear need to critically examine how financial management practices influence emergency preparedness and disease-outbreak response in public health institutions. Strengthening financial planning, allocation efficiency, procurement systems, and accountability mechanisms may be essential to improving the speed, effectiveness, and sustainability of outbreak response operations in Nigeria and similar contexts.

Objective of the Study

The main objective of this study is to examine the role of financial management in strengthening emergency preparedness and disease-outbreak response in public health institutions.

Literature Review

1. Conceptual Review

1.1 Concept of Financial Management in Public Health Institutions

Financial management in public health institutions refers to the planning, organisation, control, allocation, and monitoring of financial resources to achieve health service objectives efficiently, transparently, and accountably. It encompasses budgeting, accounting, procurement, auditing,

expenditure control, financial reporting, and resource mobilisation. In emergency health systems, financial management is particularly important because it determines whether funds and essential resources can be made available and deployed rapidly during disease outbreaks.

The World Health Organization (2024) and OECD (2025) agree that strong financial management systems improve the capacity of health institutions to respond effectively to emergencies. However, their emphasis differs. The World Health Organization (2024) focuses mainly on institutional accountability, procurement efficiency, and the timely availability of essential health commodities. In contrast, OECD (2025) places greater emphasis on the broader public financial management environment, particularly the capacity of governments to mobilise contingency funds and bypass administrative delays during health shocks.

The World Bank (2023) presents a contrasting perspective by highlighting the consequences of weak financial systems. While the World Health Organization (2024) and OECD (2025) identify the benefits of effective financial management, the World Bank (2023) demonstrates that inadequate systems result in delayed procurement, poor allocation of funds, and inefficient expenditure. Collectively, these studies suggest that financial management is not merely an administrative function but a central determinant of institutional readiness and operational effectiveness during public health emergencies.

1.2 Concept of Emergency Preparedness in Public Health

Emergency preparedness refers to the planned activities, structures, and systems that enable public health institutions to detect, prevent, manage, and respond effectively to disease outbreaks and other health emergencies. Its major components include disease surveillance, risk assessment, workforce training, emergency planning, stockpiling of essential supplies, laboratory capacity, communication systems, and inter-agency coordination.

The World Health Organization (2024) conceptualises preparedness as a continuous investment in health system capacity rather than a temporary reaction to an outbreak. This view implies that preparedness must be maintained before, during, and after health emergencies. The World Health Organization (2025) extends this position by drawing attention to recent emergencies such as COVID-19, mpox, and Ebola preparedness activities in Africa. While the World Health Organization (2024) provides a general institutional explanation of preparedness, the World Health Organization (2025) demonstrates its practical relevance in the context of emerging and recurring infectious disease threats.

Both reports agree that early detection and containment depend on sustained preparedness investments. However, the World Health Organization (2025) gives greater attention to the need for continuous financing, particularly in countries exposed to repeated infectious disease outbreaks. The comparison suggests that emergency preparedness requires not only technical

capacity but also dependable financial systems capable of sustaining surveillance, training, logistics, and response infrastructure over time.

1.3 Disease-Outbreak Response in Public Health Institutions

Disease-outbreak response refers to the coordinated actions undertaken by health institutions to contain, control, and mitigate the spread of infectious diseases following detection. Such actions include case identification and management, contact tracing, vaccination, laboratory testing, infection prevention and control, emergency procurement, risk communication, community engagement, and logistical coordination.

Resolve to Save Lives (2024) and the World Health Organization (2025) both identify rapid financing as a major determinant of effective outbreak response. Resolve to Save Lives (2024), however, concentrates more directly on the relationship between the timing of financial disbursement and operational response. It argues that delays in releasing funds may allow outbreaks to escalate before containment activities are fully implemented. The World Health Organization (2025), on the other hand, discusses outbreak financing within a broader health emergency framework and identifies financial bottlenecks as part of the systemic constraints affecting response effectiveness.

Recent cholera and Lassa fever outbreaks, together with Ebola preparedness exercises in Nigeria, illustrate the practical relevance of these arguments (WHO, 2025). Compared with the broader global position presented by Resolve to Save Lives (2024), the World Health Organization (2025) provides evidence that financing challenges remain especially important in countries where health institutions operate under limited fiscal space and bureaucratic funding procedures. Therefore, disease-outbreak response depends not only on epidemiological expertise but also on financial arrangements that support immediate mobilisation and flexible deployment of resources.

1.4 Financial Management and Emergency Preparedness

Financial management contributes to emergency preparedness by ensuring the availability of contingency funds, supporting effective budgeting, prioritising critical health needs, and maintaining essential preparedness activities. Emergency preparedness plans require consistent financial support for surveillance systems, workforce development, laboratory services, emergency stockpiles, communication systems, and logistical arrangements.

The World Health Organization (2024) and OECD (2025) similarly associate effective financial systems with stronger preparedness outcomes. The World Health Organization (2024) reports that countries with dedicated emergency health funds demonstrate faster outbreak detection and response. OECD (2025), however, attributes improved responsiveness not only to the existence of

emergency funds but also to flexible budgeting systems that allow institutions to reallocate resources during crises.

This distinction is important because the presence of an emergency fund does not necessarily guarantee effective preparedness where access to the fund remains restricted by rigid procedures. The World Bank (2023) supports this argument by showing that rigid budget structures and delayed fund releases continue to weaken preparedness systems in many low- and middle-income countries. Thus, while the World Health Organization (2024) emphasises the availability of dedicated funding, OECD (2025) and the World Bank (2023) highlight the importance of flexibility and timely access. Taken together, the studies indicate that emergency preparedness depends on both adequate financial provision and the institutional capacity to release and utilise funds efficiently.

1.5 Financial Management and Disease-Outbreak Response

Effective financial management influences the speed, quality, and sustainability of disease-outbreak response. Rapid disbursement of funds enables public health institutions to procure medicines, diagnostic materials, personal protective equipment, vaccines, transportation services, communication materials, and other emergency supplies without unnecessary delays.

Evidence from Nigeria indicates that structured financing mechanisms, including the Basic Health Care Provision Fund, can strengthen state-level preparedness and response capacity by providing more organised channels for health financing (Federal Ministry of Health, 2026). This position is consistent with the World Health Organization (2025), which recognises the importance of emergency financing arrangements in improving outbreak response. However, the two sources differ in emphasis. The Federal Ministry of Health (2026) focuses on the progress made through national financing mechanisms, whereas the World Health Organization (2025) draws attention to continuing financial bottlenecks, bureaucratic delays, and accountability weaknesses.

The comparison suggests that the introduction of structured funding mechanisms represents an important improvement, but such mechanisms may not produce optimal outcomes where disbursement remains slow or accountability procedures are weak. Consequently, effective outbreak financing requires more than the creation of funds. It also requires transparent management, rapid release procedures, effective expenditure monitoring, and institutional flexibility.

2. Theoretical Review

2.1 Resource-Based Theory

Resource-Based Theory proposes that organisational performance depends on the availability, quality, and effective utilisation of valuable resources. Within public health institutions, financial

resources constitute strategic assets because they support the acquisition of medicines, equipment, trained personnel, laboratory services, information systems, and emergency logistics.

Applied to the present study, Resource-Based Theory suggests that institutions with adequate financial resources and strong financial management capabilities are better positioned to prepare for and respond to disease outbreaks. However, the theory also implies that the mere availability of funds is insufficient. Financial resources must be effectively allocated, controlled, and converted into operational capacity before they can improve emergency outcomes.

Compared with Systems Theory, Resource-Based Theory focuses more directly on the internal resources available to an institution. It is therefore useful for explaining why some public health institutions perform better than others despite being exposed to similar disease threats. Nevertheless, the theory gives limited attention to the interactions among financial, administrative, logistical, and human-resource components. This limitation makes it necessary to complement the theory with Systems Theory.

2.2 Systems Theory

Systems Theory views public health institutions as interconnected structures in which financial, human, technical, administrative, and logistical components depend on one another. According to this perspective, the performance of the entire emergency response system is influenced by the effectiveness of each component and the quality of interaction among them.

In outbreak situations, poor financial coordination can delay procurement, weaken surveillance, interrupt logistics, and limit workforce deployment, thereby reducing the efficiency of the broader health system (WHO, 2024). Unlike Resource-Based Theory, which concentrates on the possession and utilisation of organisational resources, Systems Theory explains how failures in one area of an institution can affect several other operational areas.

For example, adequate laboratory personnel may be available, but their effectiveness may be limited where financial delays prevent the purchase of testing kits. Similarly, surveillance systems may identify an outbreak early, but containment may still fail if funds are not released for transportation, contact tracing, or risk communication. Systems Theory therefore provides a broader explanation of how financial management affects emergency preparedness and response through its interaction with other institutional components.

2.3 Contingency Theory

Contingency Theory argues that organisational effectiveness depends on the degree of alignment between internal systems and changing external conditions. It rejects the assumption that a single organisational arrangement is suitable for every situation. In disease-outbreak settings, financial

systems must therefore be flexible enough to respond to changes in the scale, location, severity, and duration of health emergencies.

Compared with Resource-Based Theory, Contingency Theory places less emphasis on the quantity of available resources and greater emphasis on the adaptability of financial procedures. An institution may possess adequate funds but remain ineffective where its approval and procurement systems cannot adjust to urgent circumstances. Similarly, while Systems Theory explains the interdependence of institutional components, Contingency Theory explains why those components must be modified in response to changing emergency conditions.

The theory is therefore relevant to the present study because disease outbreaks frequently require rapid changes in spending priorities, procurement procedures, staffing arrangements, and resource allocation. Rigid financial structures may reduce responsiveness, while adaptive systems may improve the speed and effectiveness of outbreak management. Together, Resource-Based Theory, Systems Theory, and Contingency Theory provide complementary explanations of the role of financial resources, institutional interdependence, and procedural flexibility in public health emergency management.

3. Empirical Review

3.1 Financial Management and Health Emergency Response

OECD (2025) found that countries with strong public financial management frameworks experienced faster COVID-19 response because they were able to allocate resources efficiently and activate emergency budgets promptly. Similarly, the World Health Organization (2024) reported that emergency health financing mechanisms improved outbreak response in several African countries by facilitating rapid resource mobilisation.

Although both studies establish a positive relationship between financial management and emergency response, they differ in scope and emphasis. OECD (2025) examines public financial management at the broader governmental level and focuses mainly on the experience of the COVID-19 pandemic. The World Health Organization (2024), in contrast, concentrates more specifically on emergency health financing mechanisms and their application within African health systems.

The findings of the two studies are complementary. OECD (2025) demonstrates that general public financial management capacity influences national response effectiveness, whereas the World Health Organization (2024) shows that specialised health emergency financing arrangements are necessary for converting national financial capacity into practical outbreak-control activities. However, both studies rely largely on cross-country evidence and provide limited institution-specific analysis of how budgeting, auditing, procurement, and fund-release procedures affect

preparedness and response within individual public health institutions. This creates a need for further research at the institutional level.

3.2 Emergency Preparedness and Financial Systems

The World Bank (2023) found that weak financial planning in health institutions contributes to inadequate stockpiling of essential medical supplies and consequently reduces emergency preparedness. It also observed that countries with dedicated emergency funds were better able to maintain essential health services during outbreaks.

These findings support the World Health Organization (2024), which associates dedicated emergency health funding with faster outbreak detection and response. Nevertheless, the World Bank (2023) places greater emphasis on advance planning and continuity of services, while the World Health Organization (2024) focuses more strongly on the rapid activation of funds during emergencies. The comparison shows that emergency financing performs two related functions. First, it supports preparedness activities before an outbreak, including stockpiling and workforce training. Second, it supports immediate response activities after an outbreak has been detected.

However, the studies do not fully explain how internal financial-management practices within public health institutions determine whether emergency funds are translated into actual preparedness capacity. Issues such as expenditure control, procurement efficiency, financial accountability, and the speed of internal approval processes remain insufficiently examined. The present study addresses this gap by assessing financial management as an institutional process rather than considering emergency funding solely in terms of its availability.

3.3 Nigerian Context

The Federal Ministry of Health (2026) reported that Nigeria has strengthened its outbreak-response capacity through mechanisms such as the State Outbreak Investigation and Response Fund, which is intended to provide rapid financing during public health emergencies. This development suggests increasing recognition of the need for decentralised and immediately accessible outbreak financing.

However, the World Health Organization (2025) presents a more cautious assessment by identifying delayed disbursement, weak accountability systems, and inadequate budgetary allocation as continuing barriers to effective emergency response. Whereas the Federal Ministry of Health (2026) emphasises institutional progress and the establishment of financing mechanisms, the World Health Organization (2025) highlights the operational challenges that may limit the effectiveness of such mechanisms.

The divergence between these reports indicates a gap between policy design and practical implementation. Although emergency funds and structured financing mechanisms may exist, their

impact may be reduced by bureaucratic procedures, weak monitoring systems, inadequate allocations, and delays in releasing approved funds. Consequently, there is a need to examine not only whether financial mechanisms are available but also how effectively they are managed within public health institutions.

3.4 Ugbede's Contribution

Ugbede (2025) found that environmental and social conditions, including overcrowding, substantially increase the risk of infectious disease transmission in Nigeria. Unlike the studies by OECD (2025), the World Health Organization (2024), and the Federal Ministry of Health (2026), Ugbede (2025) did not directly investigate financial management or emergency financing. Instead, the study focused on the epidemiological and social conditions that increase population exposure to infectious diseases.

Despite this difference, Ugbede's findings complement the financial-management literature by demonstrating the type of high-risk environment in which emergency preparedness and rapid response are most needed. Where overcrowding and related conditions increase disease-transmission risks, public health institutions require adequate funding for surveillance, preventive health education, laboratory testing, infection-control measures, community engagement, and rapid intervention.

Ugbede (2025) therefore contributes indirectly to the present study by establishing that outbreak risks are influenced by broader environmental and social conditions. However, the study does not explain how financial-management practices determine the ability of health institutions to respond to those risks. The present study extends Ugbede's contribution by examining financial preparedness as an institutional mechanism that can support epidemiological control strategies in high-risk environments.

4. Synthesis of Reviewed Literature and Identified Gap

The reviewed literature generally agrees that effective financial management strengthens public health emergency preparedness and disease-outbreak response. The World Health Organization (2024) emphasises accountability, emergency funding, procurement efficiency, and rapid resource mobilisation. OECD (2025) focuses on flexible budgeting, contingency financing, and the role of broader public financial management systems. The World Bank (2023) highlights the consequences of weak financial planning, particularly inadequate stockpiling, delayed procurement, and disruption of essential services. Resolve to Save Lives (2024) concentrates on the relationship between rapid fund disbursement and timely outbreak containment.

Within Nigeria, the Federal Ministry of Health (2026) presents evidence of progress through the Basic Health Care Provision Fund and the State Outbreak Investigation and Response Fund.

However, the World Health Organization (2025) indicates that delayed disbursement, weak accountability, and insufficient budgetary allocation continue to affect implementation. Ugbede (2025), although focused on environmental and social risk factors, further demonstrates the need for well-financed prevention and response systems in areas with high infectious disease-transmission risks.

Despite the contributions of these studies, much of the existing literature focuses on national financing frameworks, cross-country experiences, or general emergency-funding mechanisms. Limited attention has been given to how specific financial-management practices, including budgeting, fund disbursement, procurement, expenditure control, auditing, and financial accountability, influence emergency preparedness and disease-outbreak response at the institutional level. The present study addresses this gap by examining the relationship between financial management, emergency preparedness, and disease-outbreak response within public health institutions.

Methods

1. Research Design

The study adopted a cross-sectional survey research design. This design was considered appropriate because it allowed the researcher to collect data from respondents at a single point in time in order to examine the role of financial management in strengthening emergency preparedness and disease-outbreak response in public health institutions. The design also enabled the study to analyze relationships between variables without manipulating them.

2. Area of the Study

The study was carried out in public health institutions in Enugu State Nigeria, including primary, secondary, and tertiary health facilities that had experience in managing disease outbreaks such as cholera, Lassa fever, COVID-19, and other infectious diseases. These institutions were chosen because they are directly involved in emergency preparedness and outbreak response activities.

3. Population of the Study

The population of the study consisted of 1,260 health workers and administrative staff drawn from selected public health institutions. This included:

1. Medical Doctors – 180
2. Nurses and Midwives – 420
3. Public Health Officers – 220
4. Health Information/Records Officers – 160

5. Hospital Administrators/Account Officers – 280

Total Population = 1,260 respondents

Sample Size Determination

The sample size was determined using Yamane (1967) formula:

$$n = \frac{N}{1 + N(e^2)}$$

Where:

(n) = sample size

(N) = population (1,260)

(e) = level of significance (0.05)

$$n = \frac{1260}{1 + 1260(0.05^2)}$$

$$n = \frac{1260}{1 + 1260(0.0025^2)}$$

$$n = \frac{1260}{1 + 3.15}$$

$$n = \frac{1260}{4.15}$$

$$n \approx 304$$

Therefore, the sample size for the study was 304 respondents.

3.5 Sampling Technique

A multistage sampling technique was adopted:

1. Stage 1: Selection of public health institutions using purposive sampling (based on outbreak history and relevance).
2. Stage 2: Stratification of respondents into professional categories (doctors, nurses, administrators, etc.).
3. Stage 3: Proportionate allocation of sample size across strata.

4. Stage 4: Simple random sampling was used to select individual respondents.

Example of Proportionate Allocation:

1. Nurses $(420/1260 \times 304) = 101$
2. Doctors $(180/1260 \times 304) = 43$
3. Public Health Officers $(220/1260 \times 304) = 53$
4. Records Officers $(160/1260 \times 304) = 39$
5. Administrators $(280/1260 \times 304) = 68$

Sources of Data

Data for the study were collected from primary sources only, using structured questionnaires administered to respondents.

Instrument for Data Collection

The instrument used was a structured questionnaire titled:

“Financial Management and Health Emergency Response Questionnaire (FMHERQ)”

The questionnaire was divided into four sections:

Section A: Demographic Information

1. Age
2. Gender
3. Profession
4. Years of experience

Section B: Financial Management Practices

Measured using Likert scale (5-point):

1. Budget planning effectiveness
2. Procurement efficiency
3. Financial accountability
4. Speed of fund release

Section C: Emergency Preparedness

1. Availability of emergency funds
2. Stockpiling of essential drugs
3. Training and simulation exercises
4. Surveillance readiness

Section D: Disease-Outbreak Response

1. Response speed
2. Resource availability
3. Coordination efficiency
4. Outbreak containment effectiveness

Validity of the Instrument

The instrument was validated using face and content validity. It was reviewed by experts in Public Health and Financial Management. Their corrections ensured clarity, relevance, and adequacy of the items.

Reliability of the Instrument

The reliability of the instrument was tested using Cronbach Alpha method, resulting in:

1. Financial Management = 0.82
2. Emergency Preparedness = 0.79
3. Outbreak Response = 0.84

Overall reliability coefficient = 0.82, indicating high internal consistency.

Method of Data Collection

304 questionnaires were distributed to respondents across selected institutions. Out of these, 287 were correctly filled and returned, representing a response rate of:

$$\frac{287}{304} \times 100 = 94.4\%$$

This response rate was considered adequate for analysis.

Method of Data Analysis

Data collected were analyzed using:

1. Descriptive statistics (frequency, percentage, mean, and standard deviation)
2. Inferential statistics (Pearson Product Moment Correlation and Multiple Regression Analysis)

Decision Rule:

1. Mean score ≥ 3.0 = Agreed
2. Mean score < 3.0 = Disagreed

Ethical Consideration

Ethical approval was obtained from the Enugu State Ministry of Health before data collection commenced. Informed consent was obtained from all respondents, and participation was entirely voluntary. The confidentiality and anonymity of respondents were strictly maintained throughout the study. Respondents were also assured that the information provided would be used solely for academic purposes.

Results

1. Response Rate

A total of 304 questionnaires were distributed, while 287 were correctly completed and returned.

Table 1: Response Rate

Response Category	Frequency	Percentage (%)
Returned	287	94.4
Not Returned	17	5.6
Total	304	100

Source: Field Survey, 2026

The response rate of 94.4% was considered adequate for statistical analysis.

2. Demographic Characteristics of Respondents

Table 2: Distribution by Profession

Category	Frequency	Percentage (%)
Medical Doctors	41	14.3
Nurses/Midwives	102	35.5
Public Health Officers	52	18.1
Records Officers	38	13.2
Administrators/Accounts	54	18.9
Total	287	100

Source: Field Survey, 2026

The table shows that nurses and midwives constituted the highest proportion of respondents.

3. Descriptive Analysis of Key Variables

3.1 Financial Management Practices

Table 3: Financial Management

Item	Mean	SD	Decision
Budget planning is effective in my institution	3.78	0.84	Agreed
Funds are released promptly during emergencies	3.21	0.91	Agreed
Procurement is transparent and efficient	3.42	0.88	Agreed
Financial accountability is well enforced	3.55	0.79	Agreed
Grand Mean	3.49	0.85	Agreed

Source: Field Survey, 2026

Interpretation:

Respondents agreed that financial management practices exist but are moderately effective, especially in emergency fund release.

3.2 Emergency Preparedness

Table 4: Emergency Preparedness

Item	Mean	SD	Decision
Emergency stockpiles are available	3.30	0.90	Agreed
Staff are trained for outbreak response	3.45	0.82	Agreed
Surveillance systems are functional	3.62	0.78	Agreed
Emergency response plans are regularly updated	3.40	0.85	Agreed
Grand Mean	3.44	0.84	Agreed

Source: Field Survey, 2026

Interpretation:

Emergency preparedness was rated moderately strong, with surveillance systems performing slightly better than stockpiling.

3.3 Disease-Outbreak Response

Table 5: Outbreak Response Effectiveness

Item	Mean	SD	Decision
Response to outbreaks is timely	3.18	0.92	Agreed
Coordination among teams is effective	3.35	0.88	Agreed
Availability of logistics improves response	3.60	0.81	Agreed
Outbreaks are contained efficiently	3.28	0.90	Agreed
Grand Mean	3.35	0.88	Agreed

Source: Field Survey, 2026

3.4 Test of Relationship Between Variables

Table 6: Correlation Analysis

Variables	FM	EP	OBR
Financial Management (FM)	1.00	0.68**	0.72**
Emergency Preparedness (EP)	0.68**	1.00	0.75**
Outbreak Response (OBR)	0.72**	0.75**	1.00

Source: Field Survey, 2026

Note: $p < 0.05$

Interpretation:

There is a strong positive relationship between financial management and both emergency preparedness ($r = 0.68$) and outbreak response ($r = 0.72$). This indicates that improved financial management enhances both preparedness and response capacity.

3.5 Regression Analysis

Table 7: Model Summary

Model	R	R ²	Adjusted R ²	Std. Error
1	0.76	0.58	0.57	0.41

Source: Field Survey, 2026

Interpretation:

Financial management explains 58% of the variation in emergency preparedness and outbreak response.

Table 8: ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	62.41	4	15.60	92.45	0.000
Residual	45.12	282	0.16		
Total	107.53	286			

Source: Field Survey, 2026

Interpretation:

The model is statistically significant ($p < 0.05$), meaning financial management significantly influences emergency preparedness and outbreak response.

Table 9: Coefficients of Regression

Predictor	Beta	t-value	Sig.
Budgeting (BUD)	0.31	6.82	0.000
Procurement (PROC)	0.28	5.91	0.000
Financial Accountability (ACC)	0.22	4.76	0.001
Fund Allocation (FAL)	0.25	5.34	0.000

Source: Field Survey, 2026

Interpretation of Findings

The regression results show that all financial management components significantly influence emergency preparedness and outbreak response. Budgeting had the strongest effect, followed by procurement efficiency and fund allocation. This suggests that institutions with structured budgeting systems and transparent procurement processes are more likely to respond effectively to disease outbreaks.

Summary of Findings

The major findings of the study are:

2. Financial management practices significantly influence emergency preparedness.
3. There is a strong positive relationship between financial management and outbreak response effectiveness.
4. Budgeting and procurement are the most influential components of financial management.
5. Financial management explains 58% of variation in emergency preparedness and response outcomes.
6. Weak but improving emergency systems exist in public health institutions.

Discussion of Findings

This study examined the role of financial management in strengthening emergency preparedness and disease-outbreak response in public health institutions. The findings provide strong evidence

that financial management is a critical determinant of how effectively health institutions prepare for and respond to disease outbreaks.

The first objective found that financial management practices such as budgeting, procurement efficiency, fund allocation, and financial accountability significantly influence emergency preparedness. This is consistent with WHO (2024), which emphasizes that preparedness systems are only as strong as their financing structures. The result also aligns with OECD (2025), which reports that countries with flexible and well-structured public financial systems are better able to maintain emergency stockpiles, train response teams, and sustain surveillance systems.

The study further revealed that emergency preparedness in public health institutions is moderately effective, with stronger performance in surveillance systems compared to stockpiling and emergency funding release. This suggests that while institutional structures exist, financial constraints still limit full preparedness capacity. This finding supports World Bank (2023), which observed that many low- and middle-income countries struggle with translating preparedness plans into operational readiness due to funding limitations.

On outbreak response, the study found that coordination and logistics support improve response effectiveness, but timeliness remains a challenge. This indicates that delays in financial mobilization can slow down response operations, a finding that agrees with Resolve to Save Lives (2024), which identified financial bottlenecks as a major cause of delayed outbreak containment globally.

The correlation analysis showed a strong positive relationship between financial management and both emergency preparedness ($r = 0.68$) and outbreak response ($r = 0.72$). This suggests that improvements in financial systems directly enhance institutional readiness and response capacity. The regression result further confirmed that financial management explains 58% of the variation in emergency preparedness and outbreak response, indicating a strong predictive relationship.

Among the financial management components, budgeting had the strongest effect, followed by procurement efficiency, fund allocation, and financial accountability. This implies that structured budgeting and efficient procurement systems are the backbone of effective outbreak response. The finding is consistent with OECD (2025) and WHO (2025), which highlight that rapid-access budgeting systems are essential during health emergencies.

Ugbede (2025) also supports the broader context of this study by highlighting that environmental and social conditions such as overcrowding increase the risk of disease transmission. This reinforces the need for strong financial systems to support preventive interventions, surveillance, and rapid response in high-risk environments.

Conclusion

Based on the findings of this study, it is concluded that financial management plays a significant and indispensable role in strengthening emergency preparedness and disease-outbreak response in public health institutions. Effective budgeting, efficient procurement systems, transparent financial accountability, and timely fund allocation collectively enhance institutional readiness and response capability.

The study also concludes that although public health institutions have basic preparedness structures in place, their effectiveness is limited by financial constraints and delays in resource mobilization. Strengthening financial governance systems therefore remains critical to improving health security and reducing the impact of disease outbreaks.

Overall, financial management is not only an administrative function but a strategic tool that determines how quickly and effectively health systems can respond to emergencies.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Strengthening Emergency Budgeting Systems

Public health institutions should establish dedicated emergency preparedness budgets that allow rapid access to funds during outbreaks without bureaucratic delays.

2. Improved Procurement Efficiency

Procurement processes should be simplified and digitized to ensure fast acquisition of essential medical supplies during emergencies.

3. Enhanced Financial Accountability Mechanisms

Strict auditing and monitoring systems should be implemented to ensure transparency in the use of emergency funds and reduce mismanagement.

4. Establishment of Emergency Response Funds

Government and health agencies should create and sustain contingency funds specifically reserved for outbreak response activities.

5. Capacity Building for Financial Managers

Training programs should be introduced for health administrators and financial officers to improve skills in emergency financial planning and crisis budgeting.

6. Integration of Financial and Health Emergency Systems

Financial management units should be fully integrated with emergency operation centres to ensure real-time funding decisions during outbreaks.

References

- Federal Ministry of Health. (2026). *State outbreak investigation and response fund implementation report*. Abuja: Government of Nigeria.
- Jonah, J. H., Samuel, G., Abdullahi, M. I., Emmanuel, E. A., Danladi, S. S., & Ekwuluo, C. E. (2024). Nigeria's public health response to disease outbreaks: A review of strengths and weaknesses. *Journal of Public Health in Africa*, 15(1), Article a773. <https://doi.org/10.4102/jphia.v15i1.773>
- Ndembi, N., Dereje, N., Nonvignon, J., Aragaw, M., Raji, T., Fallah, M. P., Abdulaziz, M., Djoudalbaye, B., Aluso, A., Boum II, Y., Mwaba, G., Shisana, O., Ngongo, N., & Kaseya, J. (2024). Financing pandemic prevention, preparedness and response: Lessons learned and perspectives for future. *Globalization and Health*, 20(1), Article 65. <https://doi.org/10.1186/s12992-024-01066-4>
- OECD. (2025). *Smart spending to combat global health threats: Financing pandemic preparedness and response*. Organisation for Economic Co-operation and Development.
- Ogunniyi, T. J., et al. (2025). Health system resilience in Nigeria after Ebola and COVID-19: Implications for preparedness and response. *Health Policy and Planning*.
- Resolve to Save Lives. (2024). *Rapid financing mechanisms for epidemic response*. New York: RTSL.
- Ugbede, O. J. (2025). Crowded cheers, silent spread: Investigating communicable disease risks in football viewing centers across Nigeria. *International Journal of Education, Research and Scientific Development*, 7(2), 226–243. <https://doi.org/10.59795/ijersd.v7i2.224>
- World Bank. (2023). *Strengthening health systems for emergency preparedness in low-income countries*. Washington, DC: World Bank.
- World Health Organization. (2024). *Health emergency preparedness and response financing framework*. Geneva: WHO.
- World Health Organization. (2024). *Public financial management for effective response to health emergencies: Key lessons from COVID-19*. WHO.

World Health Organization. (2024). *WHO investment case deep dive: Health Emergencies Programme*.

World Health Organization. (2025). *Global health security and emergency response capacity report*. Geneva: WHO.

World Health Organization. (2025). *Health emergency preparedness and response framework and assessment reports*. WHO.

World Health Organization. (2025). *State Party Self-Assessment Annual Reporting Tool: Nigeria 2024*.

Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper & Row.