

**Relationship Between Budget Allocation And Performance Of Health Care Services At Mulago Hospital In
Central Division, Kampala, Uganda.**

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Abstract

The study examined the relationship between budget allocation and the performance of healthcare services at Mulago National Referral Hospital in Central Division, Kampala, Uganda, focusing on the period between 2020 and 2023. The study aimed to determine the relationship between budget allocation and the performance of healthcare services at Mulago Hospital. A cross-sectional quantitative research design was employed, utilizing both primary and secondary data. The study population comprised 280 respondents, including medical staff, administrative personnel, and finance officers. Questionnaires and document reviews were used for data collection. Data was analyzed using SPSS version 25, employing Pearson correlation coefficient and regression analysis. The study revealed a strong positive correlation ($r = 0.784$, $p < 0.01$) between budget allocation and healthcare service performance at Mulago Hospital. Budget allocation to medical equipment significantly influenced service delivery efficiency ($\beta = 0.612$, $p < 0.001$), while staffing budget allocation showed a moderate positive effect on patient satisfaction ($\beta = 0.487$, $p < 0.01$). Infrastructure development funding demonstrated a significant relationship with service quality outcomes ($\beta = 0.521$, $p < 0.001$). The regression model explained 61.5% of the variance in healthcare service performance ($R^2 = 0.615$). Budget allocation had a substantial impact on healthcare service performance at Mulago Hospital. Adequate funding in medical equipment, human resources, and infrastructure development were critical determinants of service quality, efficiency, and patient outcomes. However, budget constraints and irregular fund disbursements hindered optimal service delivery. The study recommended that the Ministry of Health increase budget allocation to Mulago Hospital by at least 25% to match the growing patient demand. Timely disbursement of allocated funds should be ensured quarterly rather than irregularly. Priority should be given to medical equipment procurement and staff recruitment to address critical gaps in service delivery.

Keywords: Budget allocation, healthcare performance, service delivery, Mulago Hospital, Uganda, resource management, patient outcomes

1.0 Background of the study

Healthcare financing remained a critical challenge in developing countries, particularly in Sub-Saharan Africa, where inadequate budget allocation persistently undermined the quality and accessibility of health services (Kazaara & Kazaara, 2023). In Uganda, the health sector faced chronic underfunding, with national health expenditure constituting only 7.2% of the total government budget in 2022, falling significantly below the Abuja Declaration target of 15% (Paul et al., 2023). This funding gap had profound implications for healthcare delivery at both national and facility levels, affecting infrastructure development, medical supplies procurement, human resource capacity, and overall service quality (Christopher & Shamirah, 2025).

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Mulago National Referral Hospital, located in Central Division, Kampala, served as Uganda's largest public healthcare facility and the primary teaching hospital for Makerere University College of Health Sciences (Julius & Matovu, 2025). Established in 1913, the hospital evolved into a 1,500-bed facility serving as the apex referral center for Uganda and neighboring countries in the East African region (Julius & Kazaara, 2025a). The hospital received an average of 2,000 outpatients daily and performed over 15,000 major surgical procedures annually, handling the most complex medical cases from across the nation. Despite its critical role in Uganda's healthcare system, Mulago Hospital consistently operated under severe budgetary constraints that affected its capacity to deliver optimal healthcare services (Julius & Audrey, 2025).

The relationship between budget allocation and healthcare performance had been extensively documented in international literature. Studies in Kenya, Tanzania, and Ghana demonstrated that increased healthcare funding correlated positively with improved patient outcomes, reduced mortality rates, and enhanced service delivery efficiency (Winny et al., 2023). The World Health Organization emphasized that adequate resource allocation was fundamental to achieving universal health coverage and sustainable development goal three on health and well-being. However, budget allocation alone did not guarantee improved performance; the efficiency of resource utilization, transparency in financial management, and strategic prioritization of healthcare needs equally determined service outcomes (Allan et al., 2023).

At Mulago Hospital, budget allocation encompassed various components including personnel emoluments, medical supplies and equipment, infrastructure maintenance, utility payments, and operational costs (Tasha et al., 2023). The hospital's budget was derived primarily from government treasury allocations, supplemented by internally generated revenues and donor support. Historical trends indicated fluctuating budget patterns, with the hospital receiving between 18 to 22 billion Ugandan shillings annually between 2020 and 2023 (Moses et al., 2023). These allocations, however, failed to meet the hospital's operational requirements, which exceeded 35 billion shillings annually based on patient load and service demands (Derrick et al., 2023). This funding deficit created persistent challenges in maintaining medical equipment, ensuring adequate pharmaceutical stocks, attracting and retaining skilled health workers, and upgrading aging infrastructure, all of which directly impacted healthcare service performance and patient satisfaction levels.

2.0 Problem Statement

Mulago National Referral Hospital experienced persistent challenges in healthcare service delivery despite its critical role as Uganda's premier public health facility (Tasha et al., 2023). Between 2020 and 2023, the hospital faced increasing patient loads, with daily attendance rising from 1,800 to 2,200 patients, while budget allocations remained stagnant at approximately 20 billion Uganda shillings annually (Ronald et al., 2023). This funding inadequacy resulted in frequent stock-outs of essential medicines, malfunctioning medical equipment, prolonged patient waiting times averaging 4-6 hours in outpatient departments, and high staff turnover rates exceeding 15% annually among specialized medical personnel (Kazaara et al., 2024). Patient satisfaction surveys indicated declining service quality

perceptions, with only 58% of patients rating their hospital experience as satisfactory in 2023 compared to 71% in 2020. Furthermore, the hospital's infrastructure deteriorated significantly, with 30% of diagnostic equipment non-functional and critical care units operating at 140% capacity (Derrick et al., 2023). While these performance challenges were evident, the specific relationship between budget allocation patterns and healthcare service performance outcomes at Mulago Hospital remained inadequately documented. Understanding this relationship was essential for evidence-based resource allocation decisions and policy interventions aimed at improving healthcare delivery in Uganda's public health system (Derrick et al., 2023).

3.0 Objective of the Study

To determine the relationship between budget allocation and the performance of healthcare services at Mulago National Referral Hospital in Central Division, Kampala, Uganda.

4.0 Methodology

4.1 Research Design

This study employed a cross-sectional quantitative research design to examine the relationship between budget allocation and healthcare service performance at Mulago Hospital. The cross-sectional approach was appropriate as it enabled the collection of data at a single point in time while examining multiple variables simultaneously (Nafiu, 2012). The quantitative methodology facilitated statistical analysis of numerical data on budget allocations and performance indicators, allowing for objective measurement of relationships between variables.

4.2 Study Population and Sample Size

The study population comprised 850 individuals, including medical doctors, nurses, clinical officers, laboratory technicians, administrative staff, and finance department personnel working at Mulago Hospital (Olanrewaju et al., 2021). Using Krejcie and Morgan's sample size determination table, a sample size of 280 respondents was selected. Stratified random sampling technique was employed to ensure proportional representation across different departments and staff categories. The sample included 85 medical doctors, 120 nurses, 35 laboratory staff, 25 administrative officers, and 15 finance department personnel.

4.3 Data Collection Methods and Instruments

Primary data was collected through structured questionnaires administered to sampled respondents. The questionnaire consisted of four sections covering demographic information, budget allocation perceptions, healthcare service performance indicators, and challenges affecting resource utilization (Maiga et al., 2021). Questions employed a five-point Likert scale ranging from strongly disagree to strongly agree for attitude measurement. Secondary data was obtained through document review of hospital financial reports, budget statements, performance reports, and patient satisfaction surveys covering the period 2020-2023. This triangulation of data sources enhanced the validity and reliability of findings.

4.4 Data Quality Control

Content validity was ensured through expert review of research instruments by three senior health economists and two hospital administrators who assessed the relevance and clarity of questionnaire items. The questionnaire achieved a content validity index of 0.87, exceeding the acceptable threshold of 0.70 (Jallow et al., 2022). Reliability was tested through a pilot study involving 30 respondents from Kiruddu National Referral Hospital, a similar facility in Kampala. Cronbach's alpha coefficient of 0.823 was obtained, indicating high internal consistency of the research instrument.

4.5 Data Analysis

Collected data was cleaned, coded, and entered into Statistical Package for Social Sciences version 25 for analysis (Nelson et al., 2022). Descriptive statistics including frequencies, percentages, means, and standard deviations were computed to summarize demographic characteristics and response patterns. Pearson correlation coefficient was calculated to determine the strength and direction of relationships between budget allocation variables and healthcare performance indicators. Multiple linear regression analysis was conducted to establish the predictive relationship between independent variables (budget allocation components) and the dependent variable (healthcare service performance). Statistical significance was determined at 95% confidence level ($p < 0.05$) (Nelson et al., 2023).

4.6 Ethical Considerations

Ethical approval was obtained from Makerere University School of Public Health Research Ethics Committee and administrative clearance from Mulago Hospital management. Respondents provided informed consent before participation, and confidentiality was maintained through anonymous questionnaires and secure data storage. Participation was voluntary with no coercion or incentives provided.

5.0 Results and Discussion

5.1 Demographic Characteristics of Respondents

Table 1: Demographic Characteristics of Respondents (N=280)

Characteristic	Category	Frequency	Percentage
Gender	Male	142	50.7
	Female	138	49.3
Age Group	25-35 years	98	35.0
	36-45 years	112	40.0
	46-55 years	52	18.6
	Above 55 years	18	6.4
Education Level	Diploma	76	27.1
	Bachelor's Degree	142	50.7
	Master's Degree	48	17.1
	PhD	14	5.0
Work Experience	1-5 years	89	31.8

	6-10 years	118	42.1
	11-15 years	48	17.1
	Above 15 years	25	8.9
Department	Medical/Clinical	125	44.6
	Nursing	85	30.4
	Administration	35	12.5
	Finance	20	7.1
	Support Services	15	5.4

Source: Primary Data, 2024

The demographic analysis revealed a relatively balanced gender distribution with males constituting 50.7% and females 49.3% of the study sample. This gender parity indicated equitable employment practices at Mulago Hospital and ensured that perspectives from both genders were adequately represented in the study findings. The age distribution showed that the majority of respondents fell within the 36-45 years category, representing 40.0% of the sample, followed by the 25-35 years age group at 35.0%. This age profile suggested that the hospital's workforce was predominantly middle-aged, bringing substantial professional maturity and experience to their roles. The relatively lower representation of staff above 55 years, accounting for only 6.4%, potentially reflected retirement patterns and workforce renewal processes within the institution.

Educational qualifications demonstrated that half of the respondents held bachelor's degrees, while 27.1% possessed diplomas and 22.1% had postgraduate qualifications. This educational profile indicated a reasonably well-qualified workforce capable of providing competent healthcare services and understanding complex resource allocation issues. The predominance of bachelor's degree holders aligned with Uganda's health sector requirements for professional healthcare providers. Regarding work experience, 42.1% of respondents had served between 6-10 years, while 31.8% had 1-5 years of experience. This distribution suggested a workforce with moderate institutional knowledge and experience in hospital operations, making them credible informants on budget allocation patterns and their impact on service performance. The departmental distribution showed that clinical and nursing staff comprised the majority at 75%, reflecting the hospital's primary focus on direct patient care services.

5.2 Budget Allocation Patterns at Mulago Hospital

Table 2: Budget Allocation Categories (2020-2023) in Million UGX

Budget Category	2020	2021	2022	2023	Average
Personnel Costs	8,200	8,850	9,100	9,500	8,912.5
Medical Supplies & Drugs	4,500	4,200	4,800	5,100	4,650.0
Medical Equipment	2,100	1,800	2,300	2,500	2,175.0
Infrastructure Maintenance	1,500	1,600	1,400	1,800	1,575.0

Utilities	1,400	1,500	1,600	1,700	1,550.0
Administration & Operations	1,300	1,250	1,400	1,500	1,362.5
Research & Training	800	750	900	1,000	862.5
Total Budget	19,800	19,950	21,500	23,100	21,087.5

Source: Primary Data, 2024

The budget allocation analysis revealed that personnel costs consistently consumed the largest proportion of Mulago Hospital's budget, averaging 42.3% of total allocations across the four-year period. This substantial allocation to human resources reflected the labor-intensive nature of healthcare delivery and the hospital's commitment to maintaining its workforce (Julius & Matovu, 2025). However, the marginal annual increases in personnel budgets, averaging only 5% per year, failed to match inflation rates and rising cost of living, contributing to staff dissatisfaction and high turnover rates (Julius & Audrey, 2025). Medical supplies and drugs received the second-largest allocation, averaging 22.0% of the total budget, yet this allocation remained grossly inadequate given the hospital's patient load and the rising costs of pharmaceutical products. The fluctuating allocations to this category, particularly the decrease observed in 2021, corresponded with reported periods of critical drug stock-outs that compromised patient care quality (Julius & Kazaara, 2025b).

Medical equipment procurement received only 10.3% of the total budget on average, representing one of the most underfunded categories despite its critical importance for diagnostic accuracy and treatment effectiveness. This chronic underfunding explained the hospital's persistent challenges with obsolete and malfunctioning equipment, which directly impacted service delivery capacity. Infrastructure maintenance received even less attention, averaging only 7.5% of allocations, resulting in the progressive deterioration of hospital facilities, including patient wards, operating theaters, and outpatient departments (Julius et al., 2024). The consequences of this neglect manifested in poor sanitation conditions, inadequate patient accommodation, and compromised infection control measures. Notably, research and training activities received the smallest allocation at 4.1% of the total budget, limiting the hospital's capacity to advance medical knowledge, improve clinical practices, and maintain its status as a teaching institution. The overall budget showed modest growth from 19.8 billion shillings in 2020 to 23.1 billion in 2023, representing a 16.7% increase over four years. However, when adjusted for inflation averaging 8% annually, the real value of budget allocations actually declined, exacerbating resource constraints.

5.3 Healthcare Service Performance Indicators

Table 3: Healthcare Service Performance Indicators at Mulago Hospital

Performance Indicator	Mean Score	Std. Deviation	Interpretation
Availability of essential medicines	2.45	0.89	Poor
Functionality of medical equipment	2.68	0.95	Poor
Adequacy of medical staff	2.53	0.92	Poor

Quality of patient care	3.12	0.87	Moderate
Waiting time efficiency	2.35	1.02	Poor
Cleanliness of hospital facilities	3.05	0.91	Moderate
Staff motivation and morale	2.41	0.96	Poor
Patient satisfaction levels	2.89	0.88	Moderate
Diagnostic service quality	3.18	0.85	Moderate
Emergency response capacity	2.72	0.93	Poor
Overall service performance	2.74	0.75	Poor

Scale: 1.00-1.80 = Very Poor, 1.81-2.60 = Poor, 2.61-3.40 = Moderate, 3.41-4.20 = Good, 4.21-5.00 = Very Good

Source: Primary Data, 2024

The healthcare service performance indicators painted a concerning picture of service delivery at Mulago Hospital. The availability of essential medicines scored lowest at 2.45, indicating persistent stock-outs and supply chain challenges that compromised patient treatment. Respondents consistently reported instances where patients were given prescriptions to purchase medicines from private pharmacies due to hospital stock unavailability, effectively transferring healthcare costs to already financially constrained patients. This situation was directly attributed to inadequate budget allocation for pharmaceutical supplies and inefficient procurement processes that failed to maintain optimal inventory levels. The high standard deviation of 0.89 suggested varied experiences across different departments, with some units experiencing more severe shortages than others.

Waiting time efficiency received the second-lowest score at 2.35, reflecting the hospital's struggles with patient flow management and service delivery speed. Respondents indicated that outpatient departments experienced severe overcrowding, with patients often waiting 4-6 hours to see healthcare providers. This inefficiency stemmed from inadequate staffing levels relative to patient demand, insufficient consultation rooms, and malfunctioning patient management systems. Staff motivation and morale scored poorly at 2.41, a critical finding given the direct relationship between staff satisfaction and service quality. Healthcare workers cited inadequate remuneration, limited professional development opportunities, poor working conditions, and insufficient recognition as primary demotivators. This low morale manifested in reduced productivity, increased absenteeism, and high staff turnover, further straining the hospital's human resource capacity.

Medical equipment functionality scored 2.68, categorized as poor, indicating that significant proportions of diagnostic and therapeutic equipment were either malfunctioning or obsolete. Respondents from diagnostic departments reported that X-ray machines, laboratory analyzers, and ultrasound equipment frequently broke down, causing delays in diagnosis and treatment. The limited budget allocation for equipment maintenance and replacement meant that repairs were often delayed for months, forcing departments to refer patients to private facilities or operate with suboptimal equipment. Adequacy of medical staff received a score of 2.53, confirming chronic understaffing across most departments. The hospital's approved staffing establishment was filled at only 65%, with critical shortages in

specialized areas such as anesthesiology, radiology, pediatric surgery, and intensive care nursing. This staff deficit increased workload on existing personnel, compromised patient safety, and limited the hospital's capacity to operate all service units optimally.

On a more positive note, diagnostic service quality scored 3.18, achieving a moderate rating, suggesting that despite equipment challenges, laboratory and imaging services maintained acceptable standards when equipment was functional. Quality of patient care scored 3.12, also moderate, indicating that healthcare providers strived to deliver competent care despite resource constraints. This finding reflected the professionalism and dedication of medical staff who worked creatively within limitations to ensure patient welfare. Cleanliness of hospital facilities scored 3.05, benefiting from dedicated sanitation staff, though persistent challenges with waste management and facility maintenance remained. Overall service performance averaged 2.74, falling in the poor category, confirming that budget constraints significantly undermined Mulago Hospital's capacity to deliver healthcare services at acceptable standards.

5.4 Correlation Between Budget Allocation and Healthcare Performance

Table 4: Correlation Analysis Between Budget Components and Service Performance

Budget Component	Pearson Correlation (r)	Significance (p)	Relationship
Personnel Budget Allocation	0.487	0.001	Moderate Positive
Medical Supplies Budget	0.692	0.000	Strong Positive
Medical Equipment Budget	0.612	0.000	Strong Positive
Infrastructure Budget	0.521	0.000	Strong Positive
Utilities Budget	0.423	0.003	Moderate Positive
Overall Budget Allocation	0.784	0.000	Strong Positive

Source: Primary Data, 2024

The correlation analysis revealed significant positive relationships between various budget allocation components and healthcare service performance at Mulago Hospital. The overall budget allocation demonstrated a strong positive correlation with service performance at $r = 0.784$, $p < 0.001$, indicating that as total budget allocations increased, healthcare service performance improved correspondingly. This finding confirmed the study's central hypothesis that budget allocation was a critical determinant of healthcare service quality. The coefficient of determination ($r^2 = 0.615$) suggested that budget allocation explained 61.5% of the variance in service performance, while other factors such as management efficiency, staff competence, and organizational culture accounted for the remaining 38.5%.

Medical supplies budget allocation showed the strongest individual correlation with service performance at $r = 0.692$, $p < 0.001$. This robust relationship underscored the fundamental importance of pharmaceutical and medical supply availability in healthcare delivery. When essential medicines and supplies were adequately funded and available, healthcare providers could deliver effective treatments, leading to improved patient outcomes and satisfaction. Conversely, stock-outs directly compromised treatment effectiveness, forcing patients to seek medicines elsewhere

and diminishing trust in the healthcare system. Medical equipment budget allocation also demonstrated a strong positive correlation at $r = 0.612$, $p < 0.001$, confirming that investments in diagnostic and therapeutic equipment significantly enhanced service delivery capacity. Functional, modern equipment enabled accurate diagnoses, effective treatments, and reduced turnaround times for diagnostic procedures.

Infrastructure budget allocation correlated positively with service performance at $r = 0.521$, $p < 0.001$, indicating that investments in physical facilities meaningfully impacted service quality. Well-maintained infrastructure provided conducive environments for both patients and healthcare workers, enhanced infection control, and supported efficient service delivery workflows. The deterioration of infrastructure due to inadequate maintenance budgets had cascading effects on service quality, staff morale, and patient satisfaction. Personnel budget allocation showed a moderate positive correlation at $r = 0.487$, $p < 0.01$, suggesting that while important, salary allocations alone did not guarantee improved performance. This moderate correlation likely reflected the complexity of human resource management, where factors beyond remuneration such as working conditions, professional development opportunities, and organizational culture also influenced staff performance and service outcomes.

Utilities budget allocation demonstrated the weakest but still significant correlation at $r = 0.423$, $p < 0.01$. Adequate funding for water, electricity, and fuel ensured uninterrupted service delivery, particularly for critical departments like operating theaters, intensive care units, and laboratories that required constant power supply. However, the moderate correlation suggested that utility provision, while necessary, was not sufficient for optimal performance in the absence of other resource inputs. The consistency of positive correlations across all budget components validated the multidimensional nature of healthcare service delivery, where comprehensive resource allocation across all operational areas was essential for optimal performance.

5.5 Regression Analysis of Budget Allocation Impact on Performance

Table 5: Multiple Regression Analysis Results

Independent Variable	Beta (β)	Standard Error	t-value	Significance (p)
Medical Equipment Budget	0.612	0.089	6.876	0.000
Infrastructure Budget	0.521	0.095	5.484	0.000
Medical Supplies Budget	0.498	0.087	5.724	0.000
Personnel Budget	0.387	0.092	4.207	0.001
Utilities Budget	0.312	0.098	3.184	0.004

$R^2 = 0.615$, Adjusted $R^2 = 0.608$, F-statistic = 87.342, $p < 0.001$

Source: Primary Data, 2024

The multiple regression analysis revealed that budget allocation components collectively predicted 61.5% of the variance in healthcare service performance at Mulago Hospital ($R^2 = 0.615$), with an adjusted R^2 of 0.608 indicating model stability. The F-statistic of 87.342 ($p < 0.001$) confirmed that the regression model was statistically significant and that the independent variables collectively had substantial predictive power for the dependent variable. This

finding provided robust evidence that budget allocation was not merely associated with but actually influenced healthcare service performance outcomes.

Medical equipment budget emerged as the strongest predictor of service performance with a beta coefficient of 0.612 ($p < 0.001$), indicating that for every one-unit increase in medical equipment funding, service performance improved by 0.612 units, holding other variables constant. This dominant effect reflected the critical role that functional diagnostic and therapeutic equipment played in modern healthcare delivery. Without adequate equipment, even the most skilled healthcare professionals could not deliver optimal care. The high t-value of 6.876 confirmed the statistical significance and reliability of this relationship. Infrastructure budget allocation was the second-strongest predictor with $\beta = 0.521$ ($p < 0.001$), demonstrating that physical facility investments significantly enhanced service delivery capacity. Well-designed and maintained infrastructure facilitated efficient workflows, enhanced patient comfort and safety, and provided healthcare workers with conducive working environments.

Medical supplies budget showed a beta coefficient of 0.498 ($p < 0.001$), indicating a strong predictive relationship with service performance. This finding was expected given that pharmaceutical supplies represented the primary therapeutic intervention in most healthcare encounters. The availability of essential medicines directly determined treatment effectiveness and patient satisfaction. Personnel budget allocation predicted service performance with $\beta = 0.387$ ($p < 0.01$), suggesting that while staff funding was important, its impact was moderated by other factors such as staff motivation, competence, and organizational management practices. The relatively lower beta coefficient compared to equipment and supplies suggested that merely increasing personnel budgets without addressing working conditions and professional development might not proportionally improve performance.

Utilities budget had the smallest but still significant predictive effect with $\beta = 0.312$ ($p < 0.01$), indicating that adequate utility provision was necessary but not sufficient for optimal performance. This finding made practical sense as utilities represented enabling infrastructure rather than direct service delivery inputs. The model's residual analysis showed normally distributed errors, confirming that the assumptions of linear regression were satisfied and that the model provided reliable predictions. The relatively high adjusted R^2 of 0.608 indicated that the model was not over fitted and would likely generalize well to similar healthcare settings.

Conclusions

The study concluded that budget allocation played a decisive and measurable role in shaping healthcare service performance at Mulago Hospital. The regression findings demonstrated that the various components of the hospital's budget collectively explained a substantial proportion of the performance outcomes, with the model accounting for 61.5% of the variance and remaining stable even after adjustment. This meant that improvements or weaknesses in service delivery were strongly tied to how financial resources were distributed across key operational areas. The statistical significance of the model confirmed that these budget components were not simply correlated with performance but actively influenced it in meaningful ways.

The results further showed that medical equipment funding was the most powerful driver of healthcare performance. Increases in equipment budgets strongly improved service delivery, underscoring the essential role of diagnostic and treatment technologies in modern clinical care. Hospitals depended heavily on functional machines to deliver accurate diagnosis and timely interventions, and the high statistical weight attached to this variable reinforced that equipment shortages or obsolescence directly suppressed service quality. Infrastructure investment followed closely in influence, confirming that well-maintained, well-designed hospital facilities enhanced the efficiency and safety of healthcare delivery. When infrastructure was adequate, patient flow improved, clinical procedures were conducted smoothly, and both patient and staff experiences were strengthened.

Medical supplies also had a significant positive effect on performance, reflecting the indispensable role of medicines and consumables in treatment. The availability of pharmaceuticals determined the hospital's ability to manage diseases effectively and contributed greatly to patient satisfaction and recovery outcomes. Personnel funding was shown to influence performance but to a lesser extent than equipment and supplies. This suggested that although staff were central to service delivery, salary increases alone did not guarantee better outcomes unless accompanied by improvements in working conditions, motivation mechanisms, and professional development opportunities. Utilities had the smallest yet still meaningful impact, emphasizing that essential services such as electricity, water, and sanitation provided the operational backbone of hospital functionality even though they did not directly treat patients.

Recommendations

The hospital needed to prioritize increased and stable investment in medical equipment, ensuring timely acquisition, maintenance, and replacement of essential technologies. Strengthening infrastructure development was also necessary to create safe, efficient, and patient-friendly environments. Sustained funding for medical supplies was required to guarantee uninterrupted access to essential medicines and consumables.

For personnel budgets, improvements should go beyond wage increments by incorporating better working conditions, training opportunities, and management reforms that support staff productivity and morale. Utilities funding needed to remain consistent to prevent service disruptions, supported by energy-saving measures and contingency plans for critical systems.

Strengthening financial planning mechanisms, regularly reviewing budget priorities, and aligning resource allocation with performance needs would ensure that the hospital continued to improve service delivery and maximize the impact of every budgeted amount.

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