International Journal of Multidisciplinary Research and Growth Evaluation.

Facilitating efficient procurement processes for health grants: Case studies from various diseases

Patience Okpeke Paul [1*], Anate Benoit Nicaise Abbey [2], Ekene Cynthia Onukwulu [3], Mercy Odochi Agho [4], Nsisong Louis Eyo-Udo [5]

[1] Henry Jackson Foundation Medical Research International Ltd/ Gte, Nigeria
[2] Altice USA, Plano, Texas, USA
[3] Independent Researcher, Nigeria
[4] Independent Researcher, Port Harcourt, Nigeria
[5] Ulster University, United Kingdom

* Corresponding Author: **Patience Okpeke Paul**

Article Info

ISSN (online): 2582-7138
Volume: 06
Issue: 01
January-February 2025
Received: 19-11-2024
Accepted: 20-12-2024
Page No: 701-706

Abstract
Efficient procurement processes are vital for maximizing the impact of health grants in disease management. This paper explores the key elements of efficient procurement, including transparency, technology and automation, capacity building, and stakeholder engagement. It examines the current state of health grant procurement, highlighting common challenges such as delays, inefficiencies, and corruption. The impact of efficient procurement on resource allocation, timeliness of interventions, and cost savings are discussed through specific case examples. Policy recommendations for improving procurement processes, emerging innovative approaches, and future research directions are provided. The conclusion underscores the importance of efficient procurement in health grant management for achieving better health outcomes.

Keywords: Procurement, health grants, transparency, technology, disease management

1. Introduction

Background and Context

Efficient procurement processes are crucial in health grant management, as they ensure that resources are utilized effectively and timely, directly impacting health outcomes (Musiega *et al*., 2023) [23]. Procurement in the health sector involves the acquisition of goods and services essential for disease prevention, diagnosis, treatment, and overall health system strengthening. Inefficient procurement processes can lead to delays in delivering critical medical supplies, increased costs, and reduced effectiveness of health interventions (Nyawira *et al*., 2022; Skipworth, Delbufalo, & Mena, 2020) [30, 42]. This is particularly significant in low- and middle-income countries where health systems are often under-resourced and heavily reliant on external funding from health grants. Health grants, provided by governments, international organizations, and private sectors, play a vital role in supplementing local health budgets and enabling the implementation of large-scale health programs (Siddiqi, Aftab, Raman, Soucat, & Alwan, 2023) [40]. However, the complexities of managing these grants, including compliance with donor requirements, adherence to procurement guidelines, and coordination among multiple stakeholders, present significant challenges. Therefore, optimizing procurement processes is essential for maximizing the impact of health grants and improving health outcomes across different diseases (Aartsma-Rus, Dooms, & Le Cam, 2021) [1].

Purpose and Objectives

The primary goal of this paper is to explore the importance of efficient procurement processes in managing health grants and how these processes can significantly impact health outcomes across various diseases. By examining the current state of health grant procurement, identifying key elements that contribute to efficiency, and analyzing the impact of these processes on disease management, this paper aims to provide comprehensive insights into optimizing procurement practices.

The objectives include highlighting the role of transparency, technology, capacity building, and stakeholder engagement in enhancing procurement efficiency and offering policy recommendations for improving procurement processes in health grant management.

Scope

This research focuses on the procurement processes associated with health grants, specifically examining the types of health grants available, the typical procurement procedures involved, and the common challenges faced. It will cover various aspects contributing to efficient procurement, such as transparency, technology, capacity building, and stakeholder engagement. Additionally, the paper will discuss the impact of efficient procurement on disease management, including improved resource allocation, timeliness of interventions, and cost savings. Additionally, this paper will offer a broad overview of the current state of health grant procurement and general insights into the key elements and impacts of efficient procurement processes. This approach aims to provide a high-level understanding of the topic, setting the stage for more detailed investigations and practical applications in future research.

2. Current State of Health Grant Procurement

Overview of Health Grants

Health grants are financial contributions provided by various entities to support health-related initiatives and programs. These grants can come from government bodies, international organizations, and the private sector (Hughes & Mann, 2020) [19]. Government health grants are typically allocated from national budgets to fund public health programs and infrastructure. International organizations such as the World Health Organization (WHO), the Global Fund to Fight AIDS, Tuberculosis, and Malaria, and the United Nations Children's Fund (UNICEF) provide substantial funding to support health initiatives in low- and middle-income countries (WHO, 2021, 2022). These organizations aim to address global health challenges, reduce disease burden, and strengthen health systems. Private sector contributions, including those from philanthropic foundations like the Bill & Melinda Gates Foundation, are significant in funding innovative health programs and research (Fix, Kirkwood, Steele, & Flores, 2020; Olufadewa, Adesina, Oladele, Oladoye, & Eke, 2021) [32].

Health grants are often directed toward specific disease control programs, health system strengthening, emergency response, and capacity building (Malakoane, Heunis, Chikobvu, Kigozi, & Kruger, 2020) [23]. For instance, the Global Fund provides grants to countries to combat HIV/AIDS, tuberculosis, and malaria, focusing on prevention, treatment, and care services. Similarly, government grants may support national immunization programs, maternal and child health services, and health infrastructure development. The diversity of health grants underscores their critical role in addressing various health challenges and improving population health outcomes (WHO, 2020).

Procurement Processes

The procurement processes involved in health grants encompass several stages, including planning, sourcing, contracting, and delivery. These processes ensure that the necessary goods and services are acquired efficiently, cost-effectively, and in compliance with donor and organizational guidelines (Cashin & Gatome-Munyua, 2022) [5]. Planning involves identifying the needs and requirements for goods and services, estimating quantities, and preparing procurement plans. This stage includes market assessments to understand the availability and pricing of required items. Effective planning ensures that procurement activities align with program goals and timelines (Sieleunou, Tamga, Maabo Tankwa, Aseh Munteh, & Longang Tchatchouang, 2021) [41]. In the sourcing stage, procurement teams identify potential suppliers, issue proposal requests (RFPs), and evaluate bids (Harding & Epstein, 2020) [16]. Suppliers are selected based on price, quality, delivery timelines, and compliance with procurement policies. Transparent and competitive sourcing processes are vital to achieving value for money. Once suppliers are selected, contracting involves negotiating and formalizing contracts (Hou, Lu, Deng, & Shen, 2021) [18]. These contracts outline the terms and conditions of the procurement, including delivery schedules, payment terms, and performance expectations. Clear and comprehensive contracts help mitigate risks and ensure accountability. The delivery and logistics stage involves transporting, receiving, and inspecting goods and services. Effective logistics management ensures that items are delivered to the right locations on time and in good condition. It also includes inventory management and distribution to end-users (Scott, Amajuoyi, & Adeusi, 2024; Solomon, Simpa, Adenekan, & Obasi, 2024) [39, 43]. Adherence to procurement policies and guidelines is essential throughout these stages to maintain transparency, accountability, and compliance with donor requirements. Proper documentation and record-keeping are also critical to facilitate audits and evaluations.

Challenges in Procurement

Despite the structured processes, procurement in health grant management faces several challenges that can hinder efficiency and effectiveness. Delays are common in procurement processes, often due to bureaucratic red tape, lengthy approval procedures, and logistical issues. These delays can result in stockouts of essential medicines and supplies, disrupting health services and compromising patient care.

Inefficiencies in procurement can arise from poor planning, inadequate market assessments, and lack of coordination among stakeholders. Inefficient procurement processes lead to higher costs, wastage of resources, and suboptimal health outcomes (Prabhod, 2024) [36]. For example, failure to accurately estimate needs can result in overstocking or understocking of supplies. Corruption is a significant challenge in procurement, particularly in low- and middle-income countries. It can manifest in various forms, including bribery, favoritism, and fraud. Corruption undermines the integrity of procurement processes, leading to inflated costs, substandard products, and loss of donor confidence (Chang, Rusu, & Kohler, 2021; Owusu, Chan, & Wang, 2021) [7, 35].

Compliance issues can be complex and demanding, especially when adhering to donor requirements and procurement guidelines (Matebese-Notshulwana, 2021) [25]. Non-compliance can result in financial penalties, loss of funding, and reputational damage. Ensuring compliance requires robust systems, regular audits, and continuous capacity building of procurement personnel. Supply chain disruptions caused by external factors such as political instability, natural disasters, and pandemics can affect the

availability and delivery of health commodities. These disruptions highlight the need for resilient and adaptable procurement systems (Enright, 2021) [10]. Technological barriers also pose challenges, as the lack of access to advanced procurement systems and tools is a barrier in many low-resource settings. Investing in technology and building digital infrastructure is crucial for modernizing procurement processes (Meyer *et al*., 2020) [26].

Addressing these challenges requires a multifaceted approach, including strengthening institutional capacity, promoting transparency and accountability, leveraging technology, and fostering stakeholder collaboration. By overcoming these obstacles, health grant management can achieve more efficient and effective procurement processes, ultimately improving health outcomes and maximizing the impact of health grants.

3. Key Elements of Efficient Procurement

Transparency

Transparency is a cornerstone of efficient procurement processes. It ensures that procurement activities are conducted openly and fairly, which helps build trust among stakeholders, reduce corruption, and achieve better value for money. Transparent procurement processes involve clear and accessible information about procurement opportunities, criteria for selection, contract awards, and performance evaluations. This openness deters corrupt practices by making it harder to manipulate outcomes without detection (Fazekas & Blum, 2021; Sandi, Rohman, & Utomo, 2020) [12, 38].

Methods to achieve transparency include publicizing procurement plans and opportunities through accessible platforms, such as government or organizational websites. Utilizing e-procurement systems can enhance transparency by providing a centralized, standardized, and auditable process for procurement activities (Akaba, Norta, Udokwu, & Draheim, 2020; Waithaka & Kimani, 2021) [4, 46]. These systems allow for real-time tracking of procurement stages, from tendering to contract award and implementation. Moreover, regular audits and independent evaluations are crucial for maintaining transparency and accountability. These practices deter malfeasance and provide feedback for continuous improvement in procurement processes (Hochstetter, Vásquez, Diéguez, Bustamante, & Arango-López, 2023) [17].

Technology and Automation

Technology and automation are pivotal in streamlining procurement processes, reducing manual errors, speeding up procedures, and improving overall efficiency. Automated procurement systems can handle various tasks such as supplier registration, bid submission, evaluation, and contract management. These systems reduce the need for paperwork, lower administrative costs, and minimize human error (Esan, Ajayi, & Olawale, 2024; Olawale, Ajayi, Udeh, & Odejide, 2024) [44-45].

For example, using e-procurement platforms like SAP Ariba or Oracle Procurement Cloud allows organizations to manage their procurement processes digitally. These platforms offer features such as automated requisitioning, electronic bidding, and contract lifecycle management. By using such technology, organizations can significantly reduce procurement cycle times and improve accuracy in order processing. Additionally, blockchain technology is emerging as a transformative tool in procurement. Blockchain can ensure transparency and traceability of transactions, reduce fraud, and enhance security (Udeh, Amajuoyi, Adeusi, & Scott, 2024a, 2024b) [44-45]. For instance, India's Government of Andhra Pradesh has implemented blockchain for its procurement processes, improving transparency and efficiency.

Capacity Building

Capacity building is essential for the efficiency of procurement processes. It involves training and development programs aimed at enhancing the skills and knowledge of procurement professionals. Effective procurement requires a deep understanding of market dynamics, negotiation techniques, regulatory compliance, and contract management. Training programs can cover various aspects of procurement, including using e-procurement tools, understanding legal and ethical standards, and developing strategic sourcing skills. Professional certifications, such as those offered by the Chartered Institute of Procurement & Supply (CIPS), can also contribute to capacity building by providing standardized education and accreditation for procurement professionals. Furthermore, continuous professional development (CPD) is important to keep procurement personnel updated with the latest trends and best practices. Workshops, seminars, and conferences provide platforms for learning and exchanging ideas. Investing in capacity building not only enhances individual competencies but also strengthens the overall procurement function of the organization (Abakah, Widin, & Ameyaw, 2022; Manoharan, Dissanayake, Pathirana, Deegahawature, & Silva, 2022) [2, 24].

Stakeholder Engagement

Effective stakeholder engagement is critical for smooth procurement processes. Stakeholders in procurement include internal departments, suppliers, donors, and beneficiaries. Engaging these stakeholders effectively ensures their needs and expectations are met, leading to more successful procurement outcomes (Mulwa, 2023) [28].

Stakeholder engagement involves regular communication, collaborative planning, and feedback mechanisms. For example, involving end-users in the procurement planning stage can provide valuable insights into their needs, leading to more accurate specifications and better quality of procured goods and services. Engaging suppliers through transparent and fair bidding processes fosters a competitive environment, resulting in better pricing and quality (Karttunen, Matela, Hallikas, & Immonen, 2022; Rokkan & Haugland, 2022) [20, 37]. Moreover, collaboration with donors and funding agencies is essential to ensure compliance with their procurement guidelines and reporting requirements. This collaboration can be facilitated through regular meetings, shared information systems, and joint monitoring and evaluation activities. Effective stakeholder engagement builds trust, promotes cooperation, and enhances the efficiency and effectiveness of procurement processes (Osunlaja, Enahoro, Maha, Kolawole, & Abdul, 2024) [34, 9].

4. Impact of Efficient Procurement on Disease Management

Improved Resource Allocation

Efficient procurement processes lead to better resource allocation for disease prevention and treatment. Procurement efficiency helps maximize the impact of available resources

by ensuring that funds are used effectively (Lugada *et al*., 2022) [22]. This involves purchasing high-quality goods and services at competitive prices, reducing wastage, and ensuring that resources are directed toward the most critical areas. For example, in vaccine procurement, efficient processes can ensure that vaccines are purchased at the best possible prices and delivered in the right quantities to where they are needed most. This reduces the likelihood of stockouts or overstocking, ensuring vaccines are available for immunization programs without unnecessary delays or wastage (Modisakeng, Matlala, Godman, & Meyer, 2020) [26].

Timeliness of Interventions

Timeliness is a critical factor in disease management. Efficient procurement ensures the timely delivery of essential supplies and medications, which is vital for effective disease prevention, diagnosis, and treatment. Delays in procurement can lead to interruptions in health services, which can have severe consequences, especially in emergencies (Abdul, Adeghe, Adegoke, Adegoke, & Udedeh, 2024; Ekechukwu & Simpa, 2024; Enahoro, Osunlaja, Maha, Kolawole, & Abdul, 2024) [34, 9]. For instance, during the Ebola outbreak in West Africa, delays in procuring protective equipment and medical supplies hindered the response efforts. Conversely, in cases where procurement processes are efficient, timely delivery of these critical supplies can significantly enhance the effectiveness of the response. In chronic disease management, timely procurement of medications ensures that patients receive their treatments without interruption, which is crucial for managing conditions like diabetes or hypertension (Olumade *et al*., 2020) [33].

Cost Savings

Efficient procurement processes result in significant cost savings, which can be redirected to other critical areas of health services (Greer, Klasa, & Van Ginneken, 2020) [14]. By reducing procurement cycle times, minimizing administrative costs, and preventing overpricing and corruption, efficient procurement helps stretch health budgets further. For example, centralized procurement systems, like those used by the Global Fund, can negotiate better prices due to bulk purchasing. This approach has led to substantial cost savings in the procurement of antiretroviral drugs for HIV treatment. These savings can then be used to expand treatment programs, improve healthcare infrastructure, or invest in preventive measures (Wankmüller & Reiner, 2021) [47].

Case Examples

Several diseases have seen significant impacts from efficient procurement processes (Chang & Kohler, 2020; Chang *et al*., 2021; Halabi & Gostin, 2023; Lesego *et al*., 2024; Olufadewa *et al*., 2021; WHO, 2022) [6-7, 21].

- HIV/AIDS: The Global Fund's pooled procurement mechanism has been instrumental in reducing the prices of antiretroviral drugs, ensuring that millions of people living with HIV receive timely and effective treatment. By negotiating lower prices and ensuring quality standards, the Global Fund has improved access to life-saving medications and improved health outcomes.
- Malaria: The President's Malaria Initiative (PMI) in the United States has leveraged efficient procurement processes to distribute insecticide-treated nets (ITNs) and antimalarial drugs. PMI has reduced malaria incidence and mortality rates in several high-burden countries by streamlining procurement and distribution.
- Tuberculosis: The Stop TB Partnership's Global Drug Facility (GDF) has played a critical role in procuring and distributing TB drugs. By providing technical assistance and pooled procurement services, GDF has ensured a steady supply of affordable and quality-assured TB medications, improving treatment outcomes and reducing the burden of TB.
- Vaccination Programs: Gavi, the Vaccine Alliance, has used efficient procurement processes to secure vaccines at reduced prices for low- and middle-income countries. By negotiating with manufacturers and using long-term contracts, Gavi has improved vaccine availability and affordability, leading to higher immunization rates and reduced incidence of vaccine-preventable diseases.

5. Policy Recommendations and Future Directions

Policy Recommendations

Policymakers should focus on enhancing the transparency and efficiency of procurement processes for health grants. First, they should mandate using e-procurement platforms to ensure standardized and transparent processes. These platforms can track all procurement activities, from tendering to contract fulfillment, reducing the risk of corruption and enhancing accountability. Second, establishing stringent audit and compliance mechanisms is crucial. Regular audits and independent evaluations can identify inefficiencies and irregularities, promoting continuous improvement. Third, capacity building should be prioritized, with investments in training programs for procurement professionals to enhance their skills and knowledge. Certifications and continuous professional development initiatives can complement this. Lastly, fostering public-private partnerships can leverage the expertise and resources of the private sector, improving procurement efficiency and innovation.

Innovative Approaches

Emerging trends in procurement for health grants include using blockchain technology and artificial intelligence. Blockchain can enhance transparency and traceability in procurement processes, making tracking transactions easier and preventing fraud. For instance, blockchain can be used to verify the authenticity of pharmaceuticals, reducing the risk of counterfeit drugs entering the supply chain. AI and machine learning algorithms can analyze procurement data to predict demand, optimize inventory levels, and identify the most cost-effective suppliers. Another innovative approach is adopting green procurement practices, which prioritize purchasing environmentally sustainable products and services. This not only supports global sustainability goals but also ensures the long-term viability of health programs.

Future Research Directions

Future research should explore the integration of advanced technologies like AI and blockchain in procurement processes and their impact on efficiency and transparency. Additionally, studies should investigate the effectiveness of capacity-building initiatives and how they can be scaled up across different regions and contexts. Comparative analyses of procurement models across various countries and organizations can provide insights into best practices and common pitfalls. Furthermore, research should examine the role of public-private partnerships in enhancing procurement

outcomes and the potential for innovative financing mechanisms to support sustainable procurement practices.

Conclusion

Efficient procurement processes are critical for effectively managing health grants, impacting resource allocation, timeliness of interventions, and overall health outcomes. Health grant management can significantly improve procurement efficiency by focusing on transparency, leveraging technology, building capacity, and engaging stakeholders. Policymakers must implement robust e-procurement systems, enforce compliance mechanisms, and invest in capacity building to enhance procurement processes. Embracing innovative approaches like blockchain, AI, and green procurement can further drive efficiency and sustainability. Continued research in these areas will provide valuable insights and guide future improvements. Ultimately, efficient procurement processes are essential for maximizing the impact of health grants and improving health outcomes worldwide.

References

1. Aartsma-Rus A, Dooms M, Le Cam Y. Orphan medicine incentives: how to address the unmet needs of rare disease patients by optimizing the European orphan medicinal product landscape guiding principles and policy proposals by the European expert group for orphan drug incentives (OD Expert Group). Front Pharmacol. 2021;12:744532.
2. Abakah E, Widin J, Ameyaw EK. Continuing professional development (CPD) practices among basic school teachers in the central region of Ghana. Sage Open. 2022;12(2):21582440221094597.
3. Abdul S, Adeghe EP, Adegoke BO, Adegoke AA, Udedeh EH. Public-private partnerships in health sector innovation: Lessons from around the world. Magna Scientia Adv Biol Pharm. 2024;12(1):045-059.
4. Akaba TI, Norta A, Udokwu C, Draheim D. A framework for the adoption of blockchain-based e-procurement systems in the public sector: A case study of Nigeria. In: Responsible Design, Implementation and Use of Information and Communication Technology: 19th IFIP WG 6.11 Conference on e-Business, e-Services, and e-Society, I3E 2020, Skukuza, South Africa, April 6–8, 2020, Proceedings, Part I. Skukuza, South Africa: IFIP; 2020. p. 19.
5. Cashin C, Gatome-Munyua A. The strategic health purchasing progress tracking framework: a practical approach to describing, assessing, and improving strategic purchasing for universal health coverage. Health Syst Reform. 2022;8(2):e2051794.
6. Chang Z, Kohler J. The Global Fund: Anti-Corruption, Transparency and Accountability.
7. Chang Z, Rusu V, Kohler JC. The Global Fund: why anti-corruption, transparency and accountability matter. Glob Health. 2021;17:1-11.
8. Ekechukwu DE, Simpa P. The intersection of renewable energy and environmental health: Advancements in sustainable solutions. Int J Appl Res Soc Sci. 2024;6(6):1103-1132.
9. Enahoro A, Osunlaja O, Maha CC, Kolawole TO, Abdul S. Reviewing healthcare quality improvement initiatives: Best practices in management and leadership. Int J Manag Entrepr Res. 2024;6(6):1869-1884.
10. Enright K. Elusive quality: the challenges and ethical dilemmas faced by international non-governmental organisations in sourcing quality assured medical products. BMJ Glob Health. 2021;6(Suppl 3):e004339.
11. Esan O, Ajayi FA, Olawale O. Human resource strategies for resilient supply chains in logistics and transportation: A critical review.
12. Fazekas M, Blum JR. Improving public procurement outcomes. Policy Res Work Pap. 2021;2(4):2-3.
13. Fix A, Kirkwood CD, Steele D, Flores J. Next-generation rotavirus vaccine developers meeting: Summary of a meeting sponsored by PATH and the Bill & Melinda Gates Foundation (19–20 June 2019, Geneva). Vaccine. 2020;38(52):8247-8254.
14. Greer SL, Klasa K, Van Ginneken E. Power and purchasing: why strategic purchasing fails. Milbank Q. 2020;98(3):975-1020.
15. Halabi S, Gostin LO. Global Health Funding Agencies. In: Global Health Law and Policy: Ensuring Justice for a Healthier World. 2023:365.
16. Harding GH, Epstein AL. Technology procurement. In: Clinical Engineering Handbook. Elsevier; 2020. p. 196-204.
17. Hochstetter J, Vásquez F, Diéguez M, Bustamante A, Arango-López J. Transparency and E-government in electronic public procurement as sustainable development. Sustainability. 2023;15(5):4672.
18. Hou C, Lu M, Deng T, Shen Z-JM. Coordinating project outsourcing through bilateral contract negotiations. Manuf Serv Oper Manag. 2021;23(6):1543-1561.
19. Hughes DL, Mann C. Financing The Infrastructure Of Accountable Communities For Health Is Key To Long-Term Sustainability: A legal and policy review to identify potential funding streams specifically for Accountable Communities For Health infrastructure activities. Health Aff. 2020;39(4):670-678.
20. Karttunen E, Matela M, Hallikas J, Immonen M. Public procurement as an attractive customer: a supplier perspective. Int J Oper Prod Manag. 2022;42(13):79-102.
21. Lesego A, Were LP, Tsegaye T, Idris R, Morrison L, Peterson T, *et al*. Health system lessons from the global fund-supported procurement and supply chain investments in Zimbabwe: a mixed methods study. BMC Health Serv Res. 2024;24(1):557.
22. Lugada E, Komakech H, Ochola I, Mwebaze S, Olowo Oteba M, Okidi Ladwar D. Health supply chain system in Uganda: current issues, structure, performance, and implications for systems strengthening. J Pharm Policy Pract. 2022;15(1):14.
23. Malakoane B, Heunis J, Chikobvu P, Kigozi N, Kruger W. Public health system challenges in the Free State, South Africa: A situation appraisal to inform health system strengthening. BMC Health Serv Res. 2020;20:1-14.
24. Manoharan K, Dissanayake P, Pathirana C, Deegahawature D, Silva R. A training guide for the reinforcement of continuous professional development of engineers and project managers on performance and productivity improvement practices in construction. Int J Constr Manag. 2022:1-10.
25. Matebese-Notshulwana K. Weak procurement practices and the challenges of service delivery in South Africa. In: Public Procurement, Corruption and the Crisis of

Governance in Africa. 2021:93-111.
26. Meyer AJ, Armstrong-Hough M, Babirye D, Mark D, Turimumahoro P, Ayakaka I, *et al*. Implementing mHealth interventions in a resource-constrained setting: case study from Uganda. JMIR mHealth uHealth. 2020;8(7):e19552.
27. Modisakeng C, Matlala M, Godman B, Meyer JC. Medicine shortages and challenges with the procurement process among public sector hospitals in South Africa; findings and implications. BMC Health Serv Res. 2020;20:1-10.
28. Mulwa CN. The effects of stakeholder's participation on project sustainability among donor-funded projects in Kenya: case of the Kenya Innovation Engine. Africa Nazarene University; 2023.
29. Musiega A, Tsofa B, Nyawira L, Njuguna RG, Munywoki J, Hanson K, *et al*. Examining the influence of budget execution processes on the efficiency of county health systems in Kenya. Health Policy Plan. 2023;38(3):351-362.
30. Nyawira L, Tsofa B, Musiega A, Munywoki J, Njuguna RG, Hanson K, *et al*. Management of human resources for health: implications for health systems efficiency in Kenya. BMC Health Serv Res. 2022;22(1):1046.
31. Olawale O, Ajayi FA, Udeh CA, Odejide OA. Risk management and HR practices in supply chains: Preparing for the Future. Magna Scientia Adv Res Rev. 2024;10(02):238-255.
32. Olufadewa II, Adesina MA, Oladele RI, Oladoye MJ, Eke NF. Global fund: analyzing 10 years of bridging health inequalities. Int J Health Plan Manag. 2021;36(2):282-287.
33. Olumade TJ, Adesanya OA, Fred-Akintunwa IJ, Babalola DO, Oguzie JU, Ogunsanya OA, *et al*. Infectious disease outbreak preparedness and response in Nigeria: history, limitations and recommendations for global health policy and practice. AIMS Public Health. 2020;7(4):736.
34. Osunlaja O, Enahoro A, Maha CC, Kolawole TO, Abdul S. Healthcare management education and training: Preparing the next generation of leaders-a review. Int J Appl Res Soc Sci. 2024;6(6):1178-1192.
35. Owusu EK, Chan AP, Wang T. Tackling corruption in urban infrastructure procurement: Dynamic evaluation of the critical constructs and the anti-corruption measures. Cities. 2021;119:103379.
36. Prabhod KJ. The Role of Artificial Intelligence in Reducing Healthcare Costs and Improving Operational Efficiency. Quart J Emerg Technol Innov. 2024;9(2):47-59.
37. Rokkan AI, Haugland SA. A transaction cost approach for public procurement. J Bus Ind Mark. 2022;37(2):341-352.
38. Sandi P, Rohman M, Utomo C. A concept to evaluate procurement principles implementation of public construction project in Surabaya. In: IOP Conference Series: Materials Science and Engineering; 2020.
39. Scott AO, Amajuoyi P, Adeusi KB. Advanced risk management models for supply chain finance. Finance Account Res J. 2024;6(6):868-876.
40. Siddiqi S, Aftab W, Raman AV, Soucat A, Alwan A. The role of the private sector in delivering essential packages of health services: lessons from country experiences. BMJ Glob Health. 2023;8(Suppl 1):e010742.
41. Sieleunou I, Tamga DD, Maabo Tankwa J, Aseh Munteh P, Longang Tchatchouang EV. Strategic health purchasing progress mapping in Cameroon: a scoping review. Health Syst Reform. 2021;7(1):e1909311.
42. Skipworth H, Delbufalo E, Mena C. Logistics and procurement outsourcing in the healthcare sector: A comparative analysis. Eur Manag J. 2020;38(3):518-532.
43. Solomon NO, Simpa P, Adenekan OA, Obasi SC. Circular economy principles and their integration into global supply chain strategies. Finance Account Res J. 2024;6(5):747-762.
44. Udeh EO, Amajuoyi P, Adeusi KB, Scott AO. Blockchain-driven communication in banking: Enhancing transparency and trust with distributed ledger technology. Finance Account Res J. 2024a;6(6):851-867.
45. Udeh EO, Amajuoyi P, Adeusi KB, Scott AO. The role of Blockchain technology in enhancing transparency and trust in green finance markets. Finance Account Res J. 2024b;6(6):825-850.
46. Waithaka RK, Kimani JG. Effect of e-procurement practices on supply chain performance. Glob J Purch Proc Manag. 2021;1(1):32-42.
47. Wankmüller C, Reiner G. Identifying challenges and improvement approaches for more efficient procurement coordination in relief supply chains. Sustainability. 2021;13(4):2204.
48. World Health Organization. Health policy and system support to optimize community health worker programmes for HIV, TB and malaria services: an evidence guide. 2020.
49. World Health Organization. Updated recommendations on service delivery for the treatment and care of people living with HIV. 2021.
50. World Health Organization. Accelerating the prevention, control and elimination of communicable diseases through integration: optimizing support from Gavi and the Global Fund. 2022.