

Enhancing Public Health Resource Allocation through Advanced Data Analytics: A Critical Assessment of Current Practices and Future Directions

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Abstract. As public health systems face increasing demands, optimizing resource allocation has become imperative. This study employs advanced data analytics methodologies to evaluate current practices in public health resource distribution across various regions. Utilizing a mixed-methods approach, we conducted extensive data collection and analysis, revealing critical gaps and inefficiencies in current allocation strategies. Our findings indicate that leveraging predictive analytics can lead to significant improvements in resource management, ultimately enhancing public health outcomes. We recommend that policymakers adopt data-driven strategies to ensure equitable and efficient allocation of resources, thereby addressing pressing public health challenges. The implications of these findings underscore the necessity for an analytics-driven approach in public management.

Keywords: public health, resource allocation, data analytics, public management, health disparities, predictive analytics, policy recommendations

Introduction

In the contemporary landscape of global public health, the efficient allocation of resources has emerged as a significant challenge, particularly amidst the escalating demands placed

on health systems worldwide. The COVID-19 pandemic has spotlighted the vulnerabilities within current public health frameworks, exposing systemic inefficiencies that hinder effective resource distribution. Public management scholars argue that the improper allocation of resources can exacerbate health disparities and undermine the efficacy of interventions designed to improve population health outcomes. As we move into the period from 2024 to 2026, the relevance of optimizing resource allocation remains critical, especially in an era marked by unprecedented global health challenges, including the resurgence of preventable diseases and the rising burden of chronic conditions. While traditional models of resource allocation have relied on historical data and basic statistical methods, this article advocates for a paradigm shift towards advanced data analytics as a means to enhance decision-making in public health management. By integrating predictive analytics into resource allocation strategies, public health officials can foresee potential health crises and allocate resources more effectively, thereby improving the overall responsiveness of health systems. This paper aims to critically assess the current state of public health resource allocation practices and explore the potential of data-driven methodologies in transforming these practices. We will first examine existing literature on public health resource allocation to establish a foundation for understanding the complexities of the issue. Next, we will outline our methodology, detailing how we collected and analyzed data from various public health agencies. The subsequent sections will present our findings and discuss the implications of incorporating advanced analytics into resource allocation practices. Finally, we will propose actionable recommendations for policymakers aimed at leveraging data analytics to enhance public health management practices.

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References

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