

The Impact of Value-based Purchasing on Rural and Urban Healthcare Systems in the United States

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Abstract: Since the 2010s, the U.S. government has adopted value-based purchasing, and many states have utilized this program to reduce hospital readmission rates and improve performance of urban hospitals. Nonetheless, the lack of participation in this program among rural hospitals has contributed to the growing urban-rural health disparities. This paper aims to identify policy solutions to improve health outcomes of vulnerable populations who reside in resource-poor at-home healthcare agencies, nursing homes, and hospitals in rural regions. This paper finds that rural health outcomes are significantly worse than urban parts. At the same time, it also shows that African Americans and Hispanics have higher mortality and morbidity rates than that of their White counterparts, demonstrating the need for policymakers to further address the unmet medical needs of vulnerable populations, such as racial minorities and those with chronic conditions. Therefore, this paper proposes that the government allocates more healthcare funding toward resource-poor urban hospitals. Moreover, insurers should not penalize rural hospitals with a higher proportion of high-risk patients for having higher-than-average hospital readmission rates.

Keywords: Health economics, Value-based purchasing, At-home health care, Medicare

1. Introduction

Value-based purchasing is an insurance reimbursement system that rewards hospitals for improving the quality rather than the quantity of medical services in the United States, and this new system has a mixed impact on the U.S. healthcare system [1]. In the current value-based purchasing program, hospitals will receive more funding from Medicare and other large insurers if they reduce patients' mortality and morbidity rates [2]. Many health systems and hospitals in Maryland chose to provide more vaccines for patients [3]. The increase in the availability of vaccines, physical exams, and other preventive medical services decreased the development of preventable diseases and complex medical conditions, such as diabetes and heart diseases, by at least 15.6% during the two years of the implementation of value-based purchasing [3].

Between 2010 and 2024, many hospitals have transitioned from the traditional fee-for-service approach to value-based purchasing, a program that rewards hospitals for preventing their patients from getting sick [4,5]. This program is also intended to reduce the costs of healthcare services and improve the quality of medical services for all patients. In many states, large government insurers, such as Medicare and Medicaid, have drastically adopted this program and decreased healthcare expenditure. While many urban hospitals have successfully participated in value-based purchasing

programs and benefited from them, small and medium-sized rural hospitals are not required to participate in this program. The failures of these rural hospitals to implement value-based purchasing resulted in higher mortality and morbidity rates of vulnerable populations in remote regions of the United States. To explain further, because value-based purchasing urges many urban hospitals to increase preventive services, such as physical exams and vaccinations, the premature death rate and prevalence of chronic conditions decreased significantly among patients with access to modern, urban medical centers. However, vulnerable populations who only have access to outdated and resource-poor rural clinics lack access to preventive services, which subsequently contribute to the development of their complex chronic conditions. This paper analyses how urban and rural hospitals have utilised value-based purchasing to enhance patient health. It also compares the health results of urban and rural hospitals that have implemented the programme with those that have not in order to evaluate the effects of value-based purchases. The primary objective of this article is to explore policy measures that can enhance population health outcomes in rural hospitals, reduce expenses for these institutions, and enhance the general accessibility and quality of care for patients in the United States [4, 5].

2. The impact of value-based purchasing policy

2.1. Impact of value-based purchasing on rural and urban hospitals

Many hospitals have adopted value-based purchasing to reduce rising healthcare expenditure and increase accessibility to primary healthcare providers in this country [5]. Nonetheless, this program has yet to improve the health outcomes of many patients with chronic medical conditions. Therefore, prior literature has pointed out that value-based purchasing must establish more precise criteria of evaluating the improvements in healthcare quality of hospitals. For example, new policies should clearly state that if hospitals participating in this program have succeeded in reducing the prevalence of cardiovascular diseases, they may receive a higher reimbursement rate from Medicare or other large insurers. The design of this program requires improvements to meet the growing medical needs of people with diabetes, heart disease, cancer, or other chronic conditions [6, 7]

Using a Medical Expenditure Panel Survey dataset, which includes information from 2002 to 2018, prior research has found that value-based purchasing has not reduced the number of inpatient and emergency room visits in urban and rural hospitals. More patients of all ages, especially children, have started using preventive medical services like primary doctor's visits when hospitals participate in this program. Value-based purchasing has made medical services more available to Hispanic and low-income children in some hospitals in remote areas. The policy implies that a value-based purchasing program needs to incentivize more insurance companies to reimburse at-home medical services for children with chronic diseases. These children often cannot access hospitals due to a lack of financial resources. If value-based purchasing modifies its payment model for hospitals and mandates insurers to reimburse medical services provided by at-home nurses, many children with transportation issues to hospitals and chronic diseases can get the care they need [6, 7].

When vulnerable populations with multiple chronic conditions receive medical support more promptly, the number of emergency room use and inpatient visits will likely decrease, reducing the medical costs of the overall U.S. healthcare system. To illustrate this point, by 2024, at least 40 million people have used the emergency room, and most people in need of this service are low-income people, racial minorities, or patients with chronic conditions [8]. In the United States, most healthcare expenditures come from emergency room visits and urgent medical appointments. Thus, if value-based purchasing can reduce unnecessary use of emergency room visits, the overall healthcare costs and quality of this country will improve over time. Over time, population health outcomes should

improve when more rural hospitals work with value-based buying programs to lower the cost of at-home medical services and increase their accessibility for rural people. [8]

2.2. Impact of value-based purchasing on racial minorities

Policymakers also need to take the racial composition of the patients of hospitals and at-home healthcare organizations into account when they decide whether they should penalize hospitals for having hospitalization rates that are higher than average. Value-based purchasing punishes at-home healthcare agencies financially if the hospitalization rate of the patients increases [4, 5]. Nevertheless, African Americans exhibit a higher prevalence of chronic ailments compared to white Americans and Asians, necessitating a greater allocation of medical resources. Consequently, numerous home healthcare establishments that get insurance reimbursement from Medicare decline to admit African American patients. For example, African Americans are more prone to heart disease, hypertension, and depression than their White counterparts. Moreover, the premature death rate of African Americans is also higher than that of other groups due to the suboptimal health outcomes of this group [8]. Value-based purchasing's decision to reduce the insurance reimbursement rate and funding for hospitals that have more African American patients has worsened racial health inequalities in the country [8].

2.3. Impact that value-based purchasing on the performance of primary care providers

Value-based purchasing has increased accessibility to primary care providers in many urban medical centers because these doctors help patients prevent communicable diseases and illnesses and reduce hospitalization rates and emergency room visits [4, 5]. The decrease in the utilization of urgent medical appointments enables hospitals to receive more funding and insurance reimbursement from Medicare and other insurers participating in the value-based purchasing program. Because value-based purchasing penalizes large, urban hospitals more severely for not providing patients with preventive medical services, such as vaccines and physical exams than rural clinics. Rural hospitals are less inclined to provide patients with easy access to primary care providers. The lack of access to primary care providers contributed to a higher rate of chronic diseases and hospitalization rates among rural communities [4, 5].

For example, many hospitals in Washington County of Maine interact with more low-income patients [6]. However, these hospitals have fewer primary care doctors and specialists. Thus, value-based purchasing should dedicate more money and resources to rural hospitals with low-income, rural, and complex medical conditions. Currently, many rural hospitals do not provide patients with access to family dentists, even though their patients have less money and more pre-existing medical conditions than their urban counterparts [3, 4]. Maine is only one example. Patients in many other rural parts of the United States deal with similar issues [6].

Therefore, value-based purchasing policy must allocate more state-level and federal-level funding to supporting resource-poor hospitals. In the future, value-based purchasing policies must reward hospitals financially for offering more dental and primary care medical services for impoverished patients in remote areas. Because patients in higher-quality at-home healthcare facilities have better access to primary care providers and other preventive medical services, they live longer with higher quality than those with only access to suboptimal nursing homes and at-home healthcare facilities. Many nursing homes and hospitals are reluctant to accept patients with pre-existing conditions to avoid the financial penalties that Medicare imposes on nursing homes and hospitals that fail to keep patient readmission rates low for various reasons. The evaluation criteria, set by value-based purchasing, is sometimes not appropriate for nursing homes with a high percentage of patients with multiple chronic conditions [7]. Because nursing homes and healthcare systems often do not want to

accept patients with chronic conditions to ensure that they meet Medicare’s quality improvement metrics, it becomes increasingly important for the government and value-based purchasing programs to allocate more funding and resources to high-quality at-home healthcare agencies [7]. Besides, value-based purchasing needs to implement policies to prevent at-home healthcare agencies from becoming penalized for having a higher hospital readmission rate of patients because of having a higher percentage of patients who have chronic conditions [6].

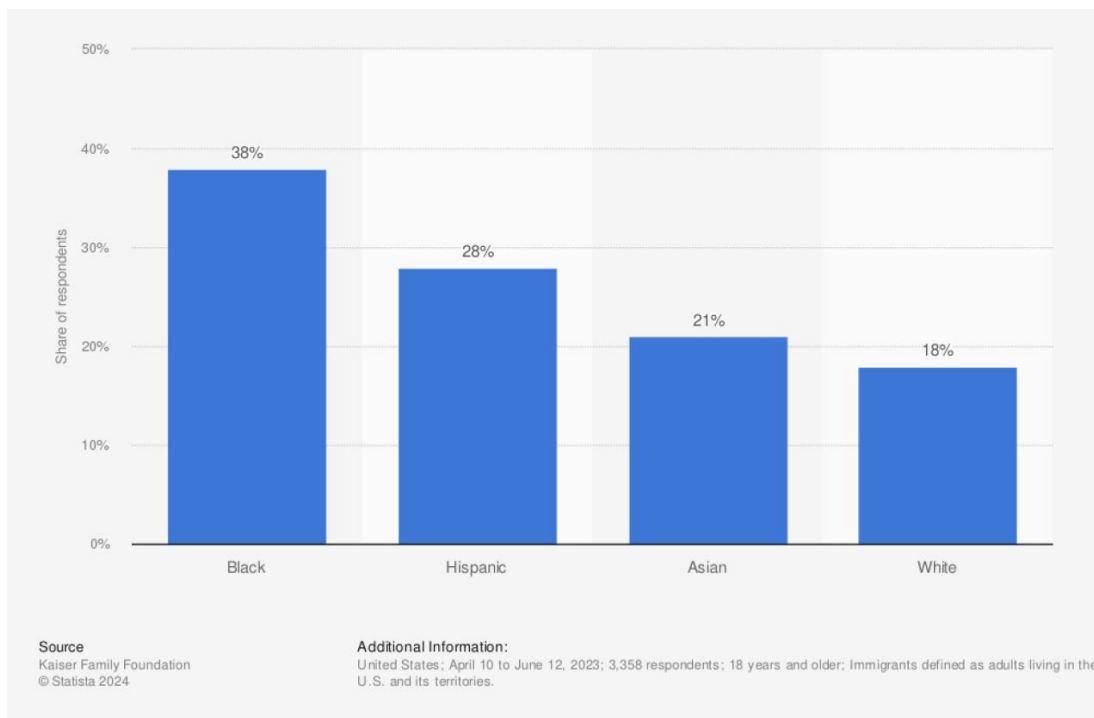


Figure 1: Share of immigrant adults who experienced being treated differently or unfairly by a doctor or health provider since coming to the U.S. as of 2023, by races [9]

As demonstrated by Figure 1, the racial and ethnic backgrounds of patients impact whether and how they receive medical services from primary care providers in the United States [9]. Value-based purchasing needs to consider this when it implements new policies to reduce racial disparities in the healthcare sector.

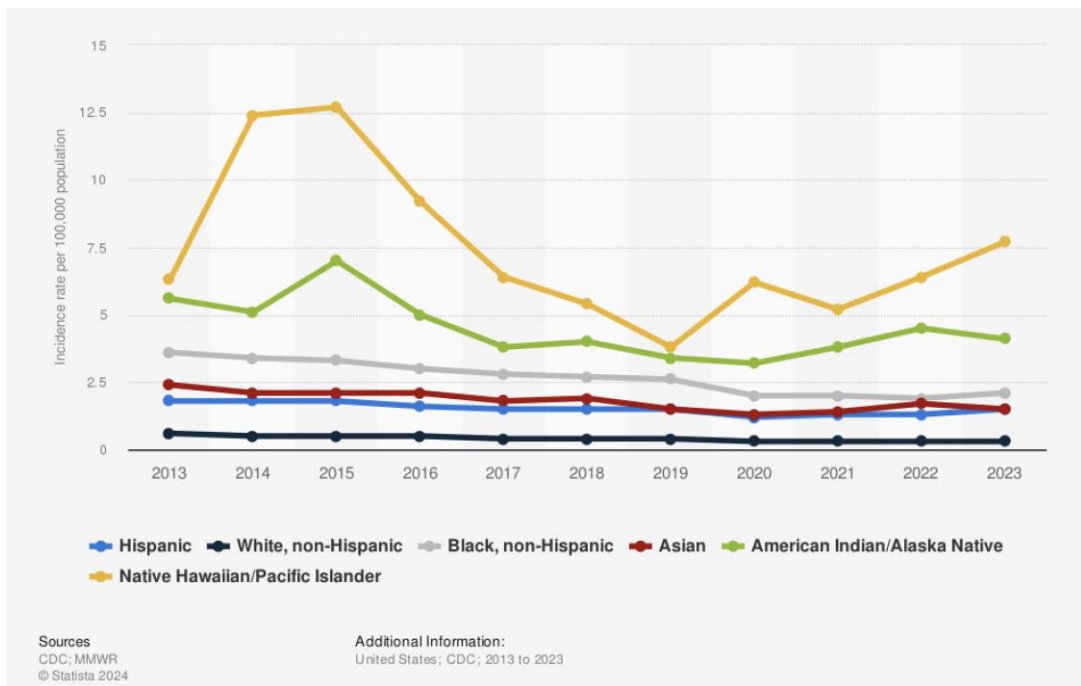


Figure 2: Incidence rate of tuberculosis (TB) cases in the U.S. from 2013 to 2023, by race/ethnicity [10]

The statistics suggest that racial disparity is a significant issue that harms population health outcomes in the United States, demonstrating the importance for policymakers to design and implement policies that address the medical needs of vulnerable populations.

3. Conclusions

The results of this study show that vulnerable populations and patients with chronic diseases require more medical support in rural regions. Value-based purchasing has forced many large urban hospitals and medical centers to increase the quality and accessibility of their healthcare services. When value-based purchasing allocates more funding to improve the quality and accessibility of rural hospitals, mortality and morbidity rates of vulnerable populations will likely decrease overtime, contributing to better population health outcomes and lower healthcare costs in the long run. Value-based purchasing must reach smaller and mid-sized rural hospitals in more regions to improve healthcare services in the United States. Hospitals implementing value-based purchasing also need to become tailored to their patient populations' specific needs and the medical institutions' financial situations.

The limitation of this research is that it needs to use empirical data, and this weakness will be addressed in future work. More research is needed to identify strategies to increase the penalty of high patient readmission rates in rural hospitals. When value-based purchasing policies require more hospitals to prioritize preventive services and reduce emergency room visits, patient health outcomes will likely improve in this country. More comprehensive and detailed evaluation criteria must be established to assess not only the positive but also the unintended impact that value-based purchasing has had on both rural and urban hospitals. When the government better understands the influence of value-based purchasing, hospitals will become more responsible for ensuring patient safety and disease prevention.

References

- [1] Amico, P., Drye, E. E., Lee, P., Lantigua, C., & Safran, D. G. (2024). *The Business Case for Quality: Estimating lives saved and harms avoided in a value-based purchasing model*. *Health Affairs Scholar*, qxae052.
- [2] Norman, M. B., Werth, P. M., Levy, B. A., Moschetti, W. E., Kunkel, S. T., & Jevsevar, D. S. (2024). *Examining the relationship between value and patient Satisfaction with treatment in total joint arthroplasty*. *Arthroplasty today*, 25, <https://doi.org/10.1016/j.artd.2023.101311>.
- [3] Calikoglu, S., Murray, R., & Feeney, D. (2012). *Hospital pay-for-performance programs in Maryland produced strong results, including reduced hospital-acquired conditions*. *Health Affairs*, 31(12), 2649-2658. <https://doi.org/10.1377/hlthaff.2012.0357>.
- [4] Newman, Lydia, Stan Taylor, Denise Levis Hewson, and Tom Wroth. "Is primary care adapting to Medicaid managed care in North Carolina? Implications for expansion and future managed care transitions." *North Carolina Medical Journal* 85, no. 2 (2024).
- [5] Kim, H., Mahmood, A., Hammarlund, N. E., & Chang, C. F. (2022). *Hospital value-based payment programs and disparity in the United States: A review of current evidence and future perspectives*. *Frontiers in public health*, 10, 882715. <https://doi.org/10.3389/fpubh.2022.882715>
- [6] LaCreta, C. (2024). *Promoting Value-Based Healthcare Decisions: A Case Study of Shared Savings Programs in New Hampshire and Maine*. *Pepperdine Policy Review*, 16(1), 4.
- [7] Tinetti, M. E., Naik, A. D., & Dodson, J. A. (2016). *Moving from disease-centered to patient goals-directed care for patients with multiple chronic conditions: patient value-based care*. *JAMA cardiology*, 1(1), 9-10.
- [8] Centers for Disease Control and Prevention. (2024). *Emergency department visits*. *National Center for Health Statistics*. <https://www.cdc.gov/nchs/fastats/emergency-department.htm>
- [9] Kaiser Family Foundation. (September 17, 2023). *Share of immigrant adults who experienced been treated differently or unfairly by a doctor or health provider since coming to the U.S as of 2023, by races [Graph]*. In Statista. Retrieved May 23, 2024, from <https://www-statista-com.lib-proxy01.skidmore.edu/statistics/1416495/immigrants-with-experience-of-unfair-treatment-in-health-care-by-race-in-the-us/>.
- [10] CDC, & MMWR. (March 28, 2024). *Incidence rate of tuberculosis (TB) cases in the U.S. from 2013 to 2023, by race/ethnicity (per 100,000 population) [Graph]*. In Statista. Retrieved May 23, 2024, from <https://www-statista-com.lib-proxy01.skidmore.edu/statistics/708170/tuberculosis-incidence-rate-us-by-us-born-ethnicity/>