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Providing Healthcare to the Poor: Utilizing Operations Research as a Means to Improving People's Lives through Quality Healthcare

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Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

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ABSTRACT

Countries across the world are constantly pursuing access to timely and appropriate primary healthcare for people living in, even those with universal healthcare systems. This paper addresses the need for transformation and a more integrative approach to delivering healthcare to the poor. We are proposing the use of multiple operations research theories and applications as a means to integrate into core healthcare processes enabling organizations to provide a more efficient and accessible healthcare system.

Keywords: Healthcare; research operations; poverty reduction; healthcare efficiency; global healthcare.

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1. INTRODUCTION

In almost every major urban city around the world, thousands of people live in overcrowded slums, streets, or other public places without any health services [1]. Ensuring access to timely and appropriate primary healthcare for people living in poverty is an issue facing all countries. This is even truefor those nations with universal healthcare systems.

It is often argued, that transformation of healthcare practices and organization could be improved by involving and empowering key stakeholders from the community and the healthcare system in the development of research interventions [2]. Since the 1960s, Operations Research (OR) models have been utilized to a range of healthcare issues. Despite the proliferation of papers in the academic literature and individual anecdotal success stories, there are still major issues around getting operations research models widely accepted and used as part of mainstream decision-making by clinicians, health managers and policy-makers [3]. This paper, therefore, examines operations models that can be integrated into healthcare delivery especially in providing access and service to the disadvantaged members of society.

2. PURPOSE AND PROBLEM STATEMENT

According to the United Nations Committee on Economic, Social and Cultural Rights, poverty is “a human condition characterized by sustained or chronic deprivation of the resources, capabilities, choices, security and power necessary for the enjoyment of an adequate standard of living and other civil, cultural, economic, political and social rights”. This definition includes the dimensions of power and dignity, which are relevant to the study of provision of care that is responsive to the needs and social conditions of people living in poverty.

Citizens living in poverty increases the probability of developing a chronic illness [4]. It is a given that people living in poverty are at greater risk for chronic illnesses, deterioration in health status and premature death [5]. Despite this reality, they are the ones least well served in matters of healthcare services [6]. People living in poverty have less access to family physicians and report having healthcare needs that are less often satisfied, as compared to people with higher incomes [7]. Finally, their experiences of healthcare services are more often negative and sometimes they feel judged by the professionals providing their care [8].

Most studies on care interactions between physicians and people living in poverty have provided descriptive data mainly on problems and challenges [9]. Social priorities such as education, poverty and healthcare continue to be at the top of the priority list for human development globally, thus a major concern for governments, international donors, including the United Nations. The countries which have been successful in reducing poverty significantly have a sustainable high economic growth. As per empirical findings, high economic growth alone is insufficient for poverty reduction. The nature, pattern and sources of growth along with the means of distribution of income are of utmost importance from the viewpoint of developmental economists [10].

3. METHODOLOGY

Given this is a theoretical paper, the authors conducted a rigorous review of the operations research literature, healthcare delivery and poverty and then be able to link the three as to how operations management theories and frameworks can be utilized in providing healthcare to the poor. This paper is not country or region specific but is applicable to any country or region.

The authors included multiple case studies also as a means of highlighting how some communities have benefited through quality healthcare delivery and in the process enriching the lives of individuals in the community.

3.1 Operations Research Theories & Models and their Relevance to Healthcare

As the operations management (OM) and supply chain management (SCM) field has evolved, a greater emphasis on services has emerged [11]. Operations Research (OR) has existed as a scientific discipline for around 60 years and has been applied to healthcare for over 40 years [3]. Optimizing problems in the health care sector has been ongoing for decades. Much attention has gradually expanded from resource allocation and strategic planning to include operational

issues such as resource scheduling and treatment planning [12].

Providing adequate and effective healthcare continues to be a major objective of most countries. Given the aging populations around the world, many countries are increasingly hard-pressed for the extra budget and resources to meet the healthcare needs [12].

Elg, Broryd & Kollberg [13] suggested using performance measurement as a method for driving improvement in healthcare organizations. Six types of activities directly or indirectly drive improvement in the clinical department: Continuous follow-up in formal arenas and meetings; improvement work; professional efforts; goal deployment; reporting based on external demands and creating awareness in everyday clinical work. Integrating performance measurement into healthcare organizations will result in the need to find infrastructures in which it is being integrated into the daily life of organizational healthcare practice [13].

It is commonly accepted that the U. S. healthcare delivery system is woefully inefficient and needs to be radically redesigned. It is a given that there has been a substantial increase in healthcare costs, thus adriving force in policy and management, but quality has become equally important in driving decisions, particularly since emerging payment systems include metrics on clinical and operational performance. We have a wide variety of information technology to capture financial, operational and clinical data and to coordinate care. We now have to utilize the available resources to better utilize resources to improve outcomes while reducing costs [14].

There are so many common problems we see in healthcare facilities many of which can be addressed through an OR approach. For example, the analyses of problem situations using an operations management approach showed inefficiencies in the admission process and found out that nurse staffing levels in the wards did not match patient outflow from the emergency department. Healthcare managers are encouraged to incorporate operations management aspects into their decision-making processes [15].

We have to also point out that very clinical program in a health system is designed to organize and apply resource inputs to create clinical outputs, the results of which are captured in operating reports, which are converted to financial accounting applications for ultimate reporting on organizational financial statements [16]. At our disposal as a society, we have an abundance of scientific knowledge, technological expertise and economic resources that add up to an impressive arsenal that could be used to reduce the unnecessary human suffering resulting from disease and ill-health. Yet, world-wide, millions of people do not have access to these effective vaccines, medicines and other life-saving health technologies [17]. Hopefully, with the continued focus on providing healthcare to the poor, utilizing available knowledge and other resources, we can take further aim at being more effective in our healthcare processes and outcomes.

3.2 The Relevance of Operations and Healthcare Management to Poverty Reduction

The other major component of this paper is to address how we can integrate operations research to build more efficient healthcare systems and also to impact poverty reduction. In preparation for full Affordable Care Act implementation, California has instituted two healthcare initiatives that provide comprehensive coverage for previously uninsured or underinsured individuals. For many people living with HIV, this has required transition either from the HIV-specific coverage of the Ryan White program to the more comprehensive coverage provided by the county-run Low-Income Health Programs or from Medicaid fee-for-service to Medicaid managed care. Patient advocates have expressed concern that these transitions may present implementation challenges that will need to be addressed if ambitious HIV prevention and treatment goals are to be achieved [18].

It is a sad fact that, every year, around 10 million children under the age of 5 die due to lack of access to simple and affordable interventions [19]. Ensuring better global health is obviously a complex challenge that involves disentangling many inter-connected causes and effects [17]. As suggested by operations management reseachers can contribute by applying existing knowledge to global health delivery and by researching new frameworks of analysis that could become the cornerstones for policy advice to those who design, operate or finance these supply chains.

In Senegal, a recent study suggested that health insurance plays a significant role in enhancing health care utilization and in protecting households from catastrophic out-of-pocket health payment. However, most of the population especially the poor and rural households are not covered by any health insurance plans. Given these findings, policy makers and donors should pay more attention to expand the coverage of health insurance, in particular to embrace the poorest section of the population in the country [20].

Rasella, Aquino & Barreto [21] highlighted that few studies have analyzed the effects of income inequality on health in developing countries, particularly during economic growth, reduction of social disparities and reinforcement of the welfare and healthcare system. This study explained how effective social policies have enabled Brazil to partially reduce poverty and income inequality This may represent an important step towards improving health and increasing life expectancy, especially in developing countries where inequalities are high.

3.3 Implications for Governments, Healthcare Organizations and Community Organizations

The implication for governments, healthcare organizations and community organizations will be discussed is critical. Educators will also play a significant role in helping to inform current students of the linkages.

Within the last few years, the American healthcare system has been undergoing numerous reforms, presenting many new and unexpected changes and problems for healthcare professionals and providers. Traditionally, not-for-profit hospitals have allocated the majority of their community benefit spending on free or discounted charity care to the poor and uninsured or writing off bad debt from unpaid patient bills [22].

Taking the lead in some aspects of healthcare, United States and China are broadening health insurance coverage and increasing spending on pharmaceuticals, in contrast to other major economies that are reducing health spending and implementing a variety of drug price controls [23]. Both countries will see rising total pharmaceutical spending and will be the two largest country markets for prescription drugs through at least 2020. In dollar terms, the U. S. pharmaceutical market will be over $440 billion in 2015 and $700 billion in 2020; China's prescription market will be over $155 billion in 2015 and grow further to $260 billion in 2020. Obviously, there is a need for increased spending to ensure there is a higher quality of life for all citizens. Community organizations and employers also play a significant role in education members of its members on becoming healthier, using generics and ways to avoid becoming sick.

4. CONCLUSION & RECOMMENDATIONS

Ensuring access to timely and appropriate primary healthcare for people living in poverty is an issue facing all countries, even those with universal healthcare systems. It is the hope for full integration and participation of key stakeholders from the community and the healthcare system in the development of research interventions [24]. We can only hope to stimulate changes in healthcare organizations and practices by encouraging collaboration between care teams and people living in poverty.

It is the intent that articles and opinions pieces grounded in research can help to create meaningful changes and improvements in delivering primary care to persons living in poverty. By involving knowledge users, including service recipients, our study is more likely to produce a transformation of professional practices and encourage healthcare organizations to take into account the needs of persons living in poverty.

It is partnerships such as the one where Philanthropist Paul G. Allen recently announced two additional partnerships with Medical Teams International and Doctors Without Borders/Medecins Sans Frontieres as part of its comprehensive relief campaign to tackle the Ebola epidemic that are need to more systematically provide care to the poor. More volunteer medical professionals and facilities are desperately needed in order to turn the tide on the spread of the epidemic. The partnerships will focus on providing essential services, facilities and infrastructure for on-the-ground health providers working to contain the virus.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Uddin J, et al. Strategies for providing healthcare services to street-dwellers in Dhaka city: Evidence from an operations research. Health Research Policy & Systems. 2012;10(1):19-30.
2. Loignon C, et al. Transforming primary healthcare by including the stakeholders involved in delivering care to people living in poverty. BMC Health Services Research. 2013;13(1):1-8.
3. Brailsford S. Overcoming the barriers to implementation of operations research simulation models in healthcare. Clinical & Investigative Medicine. 2005;28(6):312-315.
4. Chen TM, Krewski D, Dales R. Relationship between asthma prevalence and income among Canadians. JAMA. 2001;286:919–920.
5. Ross WM, Dunn JR, Berthelot JM, Kaplan GA, Lynch JW. Relation between income inequality and mortality in Canada and in the United States: Cross sectional assessment using census data and vital statistics. BMJ. 2000;320:898–902.
6. Mercer, Watt G. The inverse care law: Clinical primary care encounters in deprived and affluent areas of Scotland. Ann Fam Med. 2007;5:503–510.
7. Hutchison B. Disparities in healthcare access and use. Healthcare Policy. 2007;**3**:10–18.
8. Mercer, Cawston P, Bikker A. Quality in general practice consultations; a qualitative study of the views of patients living in an area of high socio-economic deprivation in Scotland. BMC Fam Prac. 2007;8:8:22.
9. Loignon C, et al. What makes primary care effective for people in poverty living with multiple chronic conditions? BMC Health Services Research. 2010;10:320-325.
10. Zaman K, et al. Panel Data Analysis of Growth, Inequality and Poverty. Journal of Yasar University. 2011;6(21):3523-3537.
11. Dobrzykowski D, et al. A structured analysis of operations and supply chain management research in healthcare (1982â€“ 2011). International Journal of Production Economics. 2014;147(Part B):514-530.
12. Lawson RA, et al. Focusing Accounting Curricula on Students' Long-Run Careers: Recommendations for an Integrated Competency-Based Framework for Accounting Education Discussion Document and Recommendations Prepared by the Joint IMA-MAS Curriculum Task Force. Issues in Accounting Education; 2014.
13. Elg M, Broryd KP, Kollberg B. Performance measurement to drive improvements in healthcare practice. International Journal of Operations & Production Management. 2013;33(11/12):1623-1651.
14. Green LV. The Vital Role of Operations Analysis in Improving Healthcare Delivery. Manufacturing & Service Operations Management. 2012;14(4):488-494.
15. Rosmulder RW, Luitse JSK. The role of operations management in improving emergency department outflow. International Journal of Healthcare Technology & Management. 2011;12(3/4):293-306.
16. Zismer DK. Connecting Operations, Operating Economics and Finance for Integrated Health Systems. Journal of Healthcare Management. 2013;58(5):314-319.
17. Kraiselburd S, Yadav P. Supply Chains and Global Health: An Imperative for Bringing Operations Management Scholarship into Action. Production & Operations Management. 2013;22(2):377-381.
18. Hazelton PT, et al. California's Bridge to Reforms: Identifying Challenges and Defining Strategies for Providers and Policymakers Implementing the Affordable Care Act in Low-Income HIV/AIDS Care and Treatment Settings. PLoS ONE. 2014;9(3):1-12.
19. WHO. 10 Facts on the Global Burden of Disease; 2008.
20. Asfaw A, Jatting JP. The Role of Health Insurance in Poverty Reduction: Empirical Evidence From Senegal. International Journal of Public Administration. 2007;30(8/9):835-858.
21. Rasella D, Aquino R, Barreto MLA. Impact of income inequality on life expectancy in a highly unequal developing country: The case of Brazil. Journal Of Epidemiology And Community Health. 2013;67(8):661-666.

22. Johnson SR. Diagnosing a community's health needs. (cover story). Modern Healthcare. 2014;44(24):14-16.

23. Daemmrich A, Mohanty AA. Healthcare reform in the United States and China: Pharmaceutical market implications. Journal Of Pharmaceutical Policy And Practice. 2014;7(1):9.

24. Loignon C, et al. Transforming primary healthcare by including the stakeholders involved in delivering care to people living in poverty: EQUIhealThY study protocol. BMC Health Services Research. 2013;13:92.

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