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Optimization Study of Medical Waiting Time from the Perspective of Behavioral Economics

— Take Canada as an Example

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Abstract: This article provides an in-depth look at the long-standing conundrum of long waiting times in the Canadian healthcare system and explores potential solutions from the perspective of behavioral economics, public-private partnerships (PPP), and evidence-based management. Despite Canada's reputation for universal health care, long waiting times for critical services persist, necessitating a comprehensive strategy. Multifaceted analyses point to factors contributing to inefficiencies, including an aging population, an increase in chronic diseases, and a shortage of healthcare professionals. New solutions are proposed by combining the elements of success, such as public-private partnerships, evidence-based management, and collaborative efforts. Global experiences in countries such as the United Kingdom, Spain, Turkey, Australia, Lesotho, and Iran provide insights into the potential advantages of public-private partnerships in improving healthcare delivery. To reduce the requirements, setting priorities, and restructuring as the key points of the alternative method provides a feasible strategy. In addition, solutions that work with patients, employers, and insurers aim to address inefficiencies and transform the healthcare system. An integrated approach addresses both symptoms and root causes to create a more efficient, patient-centered healthcare environment in Canada.

Keywords: Waiting time, public-private partnership, healthcare policy.

1. Introduction

Long-term waiting for medical services remains a major challenge for the global health system. This issue not only causes dissatisfaction among patients but also poses potential risks to their health. To solve this problem, please have a comprehensive understanding of the factors that affect waiting time and optimize waiting time. An effective strategy is needed. In recent years, the field of behavioral economics has become increasingly important in studying individual decision-making processes and has shown enormous potential in formulating health policies. This article explores the optimization of healthcare waiting time from the perspective of behavioral economics, particularly in the Canadian healthcare system. This is for integration.

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Canada's healthcare system is often regarded as one of the best in the world, providing universal access to medical services. However, the long waiting times for consultations, diagnostic tests, surgeries, and specialist appointments have become a persistent concern. The reasons behind these lengthy waiting times are multifaceted and require a holistic approach to resolution.

Canada has 13 provincial health insurance plans, so it's not one individual program, and under this system, Canadians have full access to the services they need, free of charge. The system's funding comes from taxes and is managed by the region This system includes hospitals and healthcare services, but prescription drugs, dentists, and others require other private insurance. Private insurance is often necessary to fill these coverage gaps and ensure access to these services [1].

Improving medical waiting time can save Canada a lot of money each year and improve medical efficiency. Canada has invested $41.3billion in different healthcare sectors over the past decade.

Previously, the government had done a lot of work to reduce medical waiting time, most directly investing funds to improve initial patient care, and so on, but the effect was minimal. The Canadian government has allocated more resources to the healthcare system to improve capacity and reduce wait times. This includes investments in infrastructure, hiring more healthcare professionals, and expanding healthcare facilities. Or Enhancing access to primary care helps alleviate the burden on hospitals and specialists. Canada has focused on strengthening the primary care system to ensure timely and appropriate care for patients, which can help reduce the need for specialist referrals and decrease wait times. These are all methods that address the symptoms rather than the root cause.

This paper believed that one reason for the failure of the previous method is that the demand for healthcare services continues to grow due to factors such as an aging population, increased chronic diseases, and changing healthcare needs. Meeting the increasing demand can be challenging even with targeted initiatives. Another point is the shortage of nurses. The impact of this is to extend waiting time, and nurses play a crucial role in the medical team, responsible for providing basic care and monitoring the patient's health status. Due to a shortage of nurses, medical institutions may have to reduce their service volume or allocate more tasks to existing nurses, resulting in an increase in their workload. This may prolong the waiting time of patients in medical institutions, especially in areas such as surgical queuing, emergency treatment, and rehabilitation care.

2. Status, Problems, and Optimization Strategies of Medical Waiting Times in Canada

Canada’s healthcare system is known for the free healthcare it provides, however, one significant issue it faces is its wait times, however, since Medicare’s birth in Saskatchewan on July 1, 1962, wait times for healthcare in Canada have been steadily increasing [2]. “Specialist physicians surveyed report a median waiting time of 27.4 weeks between referral from a general practitioner and receipt of treatment—longer than the wait of 25.6 weeks reported in 2021 [3].” There are many factors that are associated with the longer wait times. The most prominent factors are growing demand and a shortage of doctors.

The demand for healthcare is increasing, not only in Canada but across the world. This is driven by factors such as, but not limited to, an aging population. As technology has progressed, we have benefited greatly from it. Better transportation, communication, and living standards, as well as better medical technology. Better medical technology may seem like a good thing, and it is, but if we look at the flip side, the world is left with an aging population that the working population needs to pay for. On July 1, 2022, 18.8% or 7,329,910 of the Canadian population are aged 65 or older. Children aged 0-14 years of age in Canada represent 15.6% of the population or 6,070,741 people [4]. The number of older people will only increase, while childbirth appears to be dropping. The demand for healthcare mostly comes from elderly people, and as the population of elderly people increases due to better medical technology, the wait times for healthcare become longer and longer. Retired people don’t need to pay income tax, the burden then falls on the working population. As stated before, childbirth

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rates appear to be decreasing while the number of older or retired people is growing. The working population may need to pay more income tax to make up for the decrease in individuals who need to pay income tax while the need for healthcare is growing. The working population may be overworked, and this may lead to medical issues, but as previously mentioned, the wait times for healthcare are increasing. This then becomes a death spiral where things seem to get worse and worse until something goes wrong and the whole system comes crashing down.

In a recent survey in Canada, half of all Canadians do not have a primary care physician or have difficulty getting an appointment. For those who do have one, it is reported that 29% have reported difficulty in scheduling an appointment. A 2022 CMA report found that family physicians had increased rates of burnout and 62% of family physicians said that the high workload has affected their mental health negatively [5]. From the statistics above, it does not seem to surprising that there is a lack of doctors, but since there is a lack of doctors, it seems that an increased wait would be expected.

Due to these long wait times, there would be a negative health impact, quality of life is reduced and there will be economic impacts.

First of all, there could be a negative health impact. If a serious problem is caught early on, the chances of a successful surgery could be quite high, but due to the high wait times for surgeries, the optimal time for surgery may be missed. This may cause the patient to have permanent disabilities and it may even lead to death.

Secondly, quality of life will be affected. Prolonged healthcare intervention may lead to the condition worsening and may affect their ability to work and enjoy life. This, in turn, has bigger implications for society as a whole. As health issues persist due to delayed treatment, patients may experience a decrease in physical and mental well-being. This not only decreases the quality of life for the patient himself/herself, but it also decreases the quality of life for people around them, such as family members and friends as they must take care of the patient. Furthermore, absences from work due to health conditions may cause financial strains on the patient, increasing stress and lowering patient well-being.

The effect of not being able to work also affects the government. The government receives less income tax, and in some special cases, the government may have to provide benefits to the patient. In this case, no one benefits, the patient has more pain and suffering, and the government gives out benefits and receives less tax.

Ultimately, the effects of high wait times for healthcare may lead to negative health impacts, decreased quality of life, and economic burdens on the patient as well as the government.

3. Optimization Strategy for Medical Waiting Time in Canada

Canada's healthcare system faces the daunting challenge of long wait times, which impacts patient care and overall system efficiency. Based on insights from several studies, this paper explores potential optimization strategies, including experiences with public-private partnerships (PPPs) and alternative approaches to reducing wait times.

3.1. Public-Private Partnerships (PPPs) in Healthcare

As discussed by Sadeghi et al [6], the implementation of public-private partnerships (PPPs) in healthcare has had a positive impact on public hospitals globally. Countries such as the UK, Spain, Canada, Turkey, Australia, Lesotho, and Iran have adopted the PPP model to design, plan, finance, construct, operate, maintain, and manage healthcare projects. The PPP model has proved effective in improving managerial and technical skills, transferring technology, and reducing risk.

However, the success of PPPs depends on a variety of factors, including hospital conditions, government capacity, quality of care, and overall government agreement. The positive financial and

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non-financial outcomes of PPP projects show that collaboration between the public and private sectors can help to improve healthcare delivery.

3.2. Alternative Approaches to Reducing Wait Times

Sanmartin et al [7], emphasized the importance of addressing the lack of coordination and auditing as a key factor contributing to the waiting time challenges facing the Canadian healthcare system. To address this issue, they propose an evidence-based management approach that focuses on three general types of strategies: demand reduction, prioritization and reorganization of care models.

Reducing 'demand': Implementing independent list audits and systematic self-reviews can significantly reduce the number of patients on waiting lists. Regular reassessment of patients can help avoid last-minute cancellations and ensure timely delivery of care.

Prioritization: Prioritisation methods, such as the Guaranteed Maximum Waiting Time (GMPWT) scheme, can be effective in targeting patients whose waiting times exceed a defined threshold. This involves increased funding to meet coverage requirements, increased productivity, and improved waitlist management.

Reorganizing the model of care: Centralising and coordinating waiting lists can improve efficiency and response to prioritization. The use of pre-arranged admission dates and strategies to manage patient appointments more effectively, such as those used in the UK, can help to reduce missed appointments and improve performance across the system.

3.3. Collaborative Solutions and Transforming the Healthcare System

This passage discusses the challenges and solutions facing the Canadian healthcare system in reducing patient wait times, emphasizing the importance of collaboration. By collaborating with patients, employers, and insurers, the healthcare system can address inefficiencies in the referral process, increased specialization, limited reference resources, insufficient information, and a lack of patient control.

Informing and educating patients, empowering them to be active participants in healthcare decision-making, and improving overall access to the best healthcare are all important components of a collaborative solution. This collaborative approach aims to bring about positive changes in the way Canadians access healthcare and ultimately improve the functioning of the healthcare system.

In summary, a comprehensive strategy to optimize health care and address long waiting times in Canada involves a combination of public-private partnership implementation, evidence-based management approaches, and collaborative efforts. By building on global successes and addressing specific challenges within the Canadian healthcare system, it is possible to create a more efficient and patient-centered healthcare environment. This multifaceted approach aims to improve the overall quality of healthcare delivery and mitigate the impact of long wait times on patient outcomes [8].

4. Conclusion

In summary, a multifaceted and collaborative approach is required to address the challenges of long wait times in the Canadian healthcare system. The exploration of public-private partnerships (PPPs) and evidence-based management approaches provides valuable insights into potential optimization strategies. The PPP model has been successful in improving management skills, technology transfer, and risk reduction, demonstrating the potential benefits of public-private sector collaboration.

Evidence-based management is important in alternative programmes Strategies such as demand reduction through independent list audits, prioritisation initiatives and reorganisation of care models are all viable solutions. Centralising waiting lists, enforcing pre-arranged admission dates and improving the management of patient appointments could all help to improve efficiency.

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The collaborative solutions highlighted in the final paragraph highlight the importance of engaging patients, employers, and insurers. Empowering patients through education and active participation in health care decision-making while improving access to the best health care is critical. This collaborative approach aims to positively change the way Canadians access healthcare services, with the ultimate goal of improving the overall functionality of the healthcare system.

In summary, optimising healthcare wait times in Canada requires integrating successful elements of public-private partnership models, evidence-based management and collaborative solutions. By understanding the unique challenges facing Canada's healthcare system and drawing on global experience, it is possible to develop a set of strategies that will increase efficiency, improve patient-centred care and enhance the overall quality of healthcare delivery. This integrated approach addresses both the symptoms and the root causes, paving the way for a more efficient and responsive healthcare system in Canada.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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