GENERAL INTEREST

Impact of modification to healthcare insurance policy on the efficiency of blood bank management

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Abstract

A change in the healthcare insurance was implemented in the Kingdom of Saudi Arabia (KSA) in 2016 in order to make healthcare more accessible to the entire community, irrespective of an individual's financial standing, Basically, this involved the combination of all healthcare insurance policies into an amalgam of a single insurance policy. A study was undertaken to measure the efficiency of blood bank management in an attempt to measure the effectiveness of the revised healthcare insurance system. The effectiveness of the blood bank is considered a sensitive measure of the overall efficiency of the entire healthcare system. Five hospitals took part in this study in the Eastern Region of the KSA where the revised insurance system was first implemented. The availability of blood and blood components was the key indicator investigated prior to and after implementation of the revised healthcare system. The availability of blood and blood components before and after implementation of the revised healthcare insurance were 9,756 and 12,856 units (p=0.0024). Based on the significantly higher availability of the sensitive indicators, namely, blood and blood components, after the implementation of the revised healthcare insurance, it appears that the healthcare service delivery in the Eastern Region of the KSA is reassuringly adequate, has met its objective and accomplished its mission, in spite of the concern of the challenges imposed on the healthcare service delivery following changes to the healthcare insurance. Furthermore the significantly higher availability and utilization of blood and blood components also suggests that more patients are able to avail of healthcare services after the implementation of the revised health care system in the Eastern Region of the KSA. However, this finding can only be considered preliminary until further studies could confirm the present findings.

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Introduction

In the Kingdom of Saudi Arabia (KSA), as well as globally, the significance and impact of health insurance is being keenly scrutinized. Better utilization of medical services and improved health outcomes are associated with health insurance. A shift in the health care system and insurance structure has taken place in the KSA so as to make access to healthcare more affordable. In order to make healthcare more accessible to the entire community, irrespective of an individual's financial standing, a change in the healthcare insurance was implemented in the KSA in 2016. Basically, this involved the combination of all healthcare insurance policies into an amalgam of a single insurance policy.

Although affordability (financial access) was a crucial component of healthcare access, other factors, such as accessibility (barriers in the way of patients' travel time or distance to their healthcare providers) and availability (the ability of patients to select their healthcare providers), were equally important in eradicating health disparities. Spatial access, a combination of both, is regarded as being crucial in encouraging preventive treatment and reducing serious health consequences. Lack of spatial accessibility to healthcare could result in increased expenses, a high incidence of emergency breakouts, undesirable and inconsistent healthcare outcomes. The changes

to healthcare insurance policies commenced for the first time in the Eastern Region of Saudi Arabia. This was, in part, in pursuance of the nation's development plans, known as "Vision 2030."

Following this change in the Saudi Arabian system of healthcare insurance it is obvious a study is needed to evaluate the impact of this change on the healthcare service delivery. The extraordinarily difficult operational complexity and dynamic processes of healthcare institutions, as well as the administration's capacity to efficiently manage them, are part of their very character. The management of blood banks, specifically in terms of the administration's capacity to guarantee the supply of blood and blood components, is one of these factors, making it one of the most important and a very sensitive indicator of the measure of overall effectiveness and healthcare service delivery. The Eastern Regional Laboratory Administration of Saudi Arabia and the Saudi Central Board for Accreditation of Healthcare Institutions (CBAHI) both approved this research parameter, that is the availability of blood and blood components, as an indicator of healthcare quality.

The main objective of this study is therefore to determine whether changes to health insurance have an effect on how successfully hospitals manage their blood banks and whether the changes to the healthcare insurance will enhance the blood bank's ability to effectively deliver its services.

Materials and methods

A dependent variable, the effectiveness of blood bank management, and an independent variable, the changes to healthcare insurance policies, were subjects of this study. The availability of blood and blood components served as a measure of the blood bank's effectiveness and as the indicator of this investigation. The time interval to collect data on these indicators was divided into two periods: before and after the implementation of the changes to the healthcare insurance policies where the first period was compared to the second period (six months in each period of investigation). The indicator data was collected monthly through the laboratory information system for blood bank units. Statistical analyses were performed by standard methods, and a “p” value of less than 0.05 ($p<0.05$) is considered statistically significant. Table 1 shows indicator target utilization of 2000 deliveries of blood and blood components. A total of five main hospitals in the eastern region of the nation took part in the study.

Table 1: Indicator definition, calculation and anticipated outcome

Indicator	Calculation	Improvement criteria
Availability or the capability to provide blood and blood components to the clientele	The number of blood and blood components available in Central blood bank store in a specific month	Increase in delivery of the indicators

Results

The availability of blood and blood components before and after implementation of the changes to the healthcare insurance were 9,756 and 12,856 units (Table 2). These values were well above the targeted value of 2000 blood and blood components. The difference in the availability of blood and blood components after the change in healthcare insurance policies was significantly higher compared to the period before its implementation.

Discussion

The Ministry of Health of the KSA has deemed that the health care system is oriented towards employees and resources. It is centered on institutions. The health-care system in the KSA intends to be both accessible and responsive to the total well-being of its patients. The healthcare insurance modification was a challenge to the healthcare managers (Saudi Arabia Health Overview, 2019). KSA started to implement the uniform and mandatory healthcare insurance model in month of July 2016, and was fully implemented in 2017.

Table 2: Sampling size & total specimen number for the indicator before and after implementation of the revised healthcare insurance policy in the Kingdom of Saudi Arabia

Indicator Name	Sampling Size (Total Specimen No)		p and t values
	Before implementation	After implementation	
Blood and blood components availability	9756	12856	P=0.0024 T=2.9372

Many countries implemented healthcare insurance to provide accessibility to affordable healthcare. This demanded major changes in healthcare administration and management to adapt to the new circumstances and challenges demanded as a result of these changes (Allcock et al, 2019; Riham and Tarik, 2019).

It is well documented that the absence of healthcare insurance led to extremely poor and/or inadequate access to healthcare with adverse outcome to the populace. These studies provided the evidence and suggested that these adverse effects could be reduced or eliminated by the provision of healthcare insurance (Nichols et al., 2021). In view of these findings the Government of the KSA decided to implement the modifications to healthcare insurance. Indeed, the study of Bazyar and colleagues (Bazyar et al. 2021) demonstrated that inequality in financial standing among the population could lead to the fragmentation of the healthcare insurance system as a consequence of numerous health insurance policies being provided based on an individual's financial means and affordability. To address this issue, it was felt that all available healthcare insurance policies are amalgamated into a single healthcare insurance scheme.

The present study on the availability of blood and blood components before and after implementation of the revised healthcare insurance system was intended to shed light as to whether the healthcare management and workforce had the means and capability to conceptualize strategies to meet challenges to its service delivery system at all levels of the healthcare facility. Inadequate or uneven supply, as well as acute shortages of blood for transfusion in low-resource settings, pose substantial dangers to the health of patients who require transfusion (Brain et al., 2019). We have shown that the healthcare system had the capability at all levels of the institutions to meet the demands for and provide blood and blood components adequately. As it is well recognized that the blood bank service delivery is a key and sensitive indicator of healthcare service delivery the present findings appear to suggest that the healthcare demands have been met. If the blood bank is unable to meet the needs of the public or its patients, then changes must be made to the entire healthcare system to adequately meet the healthcare needs of the populace (Louis et al, 2018).

Our finding is a reassurance that pursuant to the implementation of the revised healthcare insurance policy, the provision of healthcare service delivery to the populace appears adequate and has met its objectives of providing quality healthcare to the Eastern Region of the KSA. It is of interest to note that the significantly higher availability and utilization of blood and blood components also suggests that more patients are able to avail of healthcare services after the implementation of the revised health care system in the Eastern Region of the KSA. However, this study can only be considered

preliminary because this investigation has limitations as it cannot predict with 100% certainty that the rest of the services besides the blood bank would be functioning as well, but suffice to say the healthcare system appears to be functioning adequately to meet the needs of the populace. Further studies will assist confirm the present findings.

Conclusion

In conclusion, based on the significantly higher availability and utilization of the sensitive indicators, namely, blood and blood components, it appears that the healthcare service delivery in the Eastern Region of the KSA is adequate, has met its objective and accomplished its mission after the implementation of the revised healthcare insurance policies.

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