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Data-Driven Decision Making: Focusing on United General Hospital's ICU Expansion

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Abstract

Evidence-based decision making constitutes the integration of best research evidence, patient values and preferences, and clinical expertise in situations such as those involving patient care. The eventuality is that in situations where evidence-based decision making is practice or embraced, considerations focus on some of the past contributions and experiences felt elsewhere, upon which insightful outcomes are applied to a given situation. Sources of such contributions include patient care studies, patient data that has been compiled, and randomized control studies. Some of the benefits accruing from evidence-based decision making (on the part of patients) include improvements in the patients' quality of life, an increase in the degree of patient safety, and, overall, better patient outcomes. Additional benefits include reductions in medical complications, a feeling of respect for the patients' situations, preferences, and values, and a state of practice standardization in which predictable outcomes are delivered.

Introduction

From the financial perspective, evidence-based decision making yields significant reductions in healthcare costs by ensuring that the resource distribution process is informed and targeted, remaining relevant while checking against perceived wastage (Bottles, Begoli & Worley, 2014; Wills, 2014). It is also worth noting that the decision making process reduces demands on healthcare resources by ensuring that patient adversities are minimized and avoidable re-hospitalization, proceeding to offer individualized care while saving time that, if unchecked, could translate into financial losses. In relation to the attribute of competitive advantages, evidence-based decision making ensures that patient satisfaction is achieved to avoid tarnishing the reputation of a given organization (Ferguson, 2014; Palem, 2014). Similarly, the process fosters consistency of care to avoid gaps that could prove detrimental. The structured process is also associated with the provision of generative information that leads to the expansion of nursing roles (that are research-based), transforming the patient care process in the entirety. Organizational transparency has also been associated with evidence-based decision making (Kiron, Prentice & Ferguson, 2014; Reddy & Aggerwal, 2015). Through the provision of client focused care, the practice yields high quality patient care, blends clinical care and experience, and considers the value of patients while seeking to ensure that these groups gain better experiences upon seeking services in respective institutions. It is also worth noting that evidence-based decision making leads to the identification of gaps in a given system to provide room for the transformation of weaknesses into opportunities for improvement, assuring better quality for future generations (McCue, Thompson & Kim, 2015; Wager, Lee & Glaser, 2017).

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Methods

In the case presented, the target context is United General Hospital. In the hospital, it is evident that the manner in which resources are used in the ICU and non-ICU section depicts an imbalanced ratio. For example, the operational capacity stands at 120%, an outcome that accounts for the resultant delays described. The eventuality has been a state of overcrowding in the emergency departments (EDs) and post-operative units. In summary, the imbalanced ratio in terms of facility usage yields delays in scheduled surgeries in the hospital, an adversity that threats to increase the lengths of stay in hospital and even mortality rates, as well as their associated co-morbidities. The type of health information technology (HIT) on focus concerns the adoption and implementation of remote ICU monitoring, a system that prompts incorporations of algorithms that foster surveillances in conjunction with the works of interventionists and bedside nurses. The emergent option is that in which ICU expansions are fostered while complementing the procedure with remote ICU monitoring. Despite the promising outcomes of such a decision, major themes that emerge from the data collected the consultant include the attribute of potential resistance by nurses who site the threat of loss of jobs and the mixed reactions emerging form expert opinions. These mixed reactions constitute the merits and demerits associated with remote ICU monitoring.

Results

The Option With Additional Beds

On an annual basis, the case presented reveals that the cost of ICU beds ranges from $25,000 to $30,000. Indeed, these beds are used for purposes of equipping ICU rooms. If such an option is adopted, the major benefit will be a significant reduction in patient waiting time. In addition, such an option leads to the enhancement of service delivery processes in a quicker manner. The trickle-down effect of this option lies in the significant reduction of mortality rates. In turn, patient satisfaction is likely to be experienced (Narayanan, 2014).

The Option Without Beds

This option can be likened to the initial scenario in existence at the hospital. The motivation behind this option lies in the need to improve service delivery processes to patients. The case description highlights that the hospital has a donation of $15 million at its disposal, yet the prevailing situation remains unrealistic, especially regarding the ratio of facility utilization and the percentage of patients experiencing service delays. Therefore, it is recommended that remote ICU monitoring is adopted to assure future sustainability in the hospital's units.

Remote ICU Monitoring

Some of the advantages associated with the remote ICU monitoring option include the capacity of telemedicine to provide linkages of physicians to an additional number of clients, the capacity of this system to leverage cognitive skills of physicians to a higher number of patients, and the substantial augmentation of relationships among unit groups such as physicians, nurses, and patients seeking services. This state of collaboration is also projected

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to extend and involve groups such as intensivists, surgical teams, and members of the OR group. An additional merit of this monitoring system, which is IT-based, is that real-time data is captured and communicated to physicians via the use of cameras located in patient rooms. Computerized algorithms attached to the systems offer additional benefits in terms of supporting continuous monitoring and offering focused attention that translates into individualized patient care.

Remote ICU Monitoring

Upon reducing the length of stay in ICUs. The IT system reduces the overall cost of medication. Furthermore, medication errors are reduced through surveillance and clinical support, with collaborative approaches fostering relief and confidence on the part of bedside nurses. Similarly, early detections accruing from the system's continuous surveillance aid in formulating early interventions, upon which adverse patient outcomes are checked accordingly.

Recommendations for Future Practice

While embracing remote ICU monitoring, it is recommended that expenses are added to those of regular beds because, as evidenced by the case's description, the total cost will remain lower than that which is linked to the ICU beds. The eventuality will be an improvement of service quality in an economical manner. It is also recommended that the care teams are involved in decision making to ensure that their opinions are acknowledged. The eventuality will be a state in which members of the team are motivated, having felt valued in the workplace. Similarly, an involvement of these teams in decision making provides a platform for sensitizing them regarding merits and demerits that accrue from remote ICU monitoring while seeking to expand ICU operations, upon which resistance to change might be avoided. It is recommended further that these members of the team are trained to counter any possible service malfunctions, ensuring that groups such as bedside nurses are prepared for future uncertainties.

Current versus Future Hospital State

From this case, the hospital serves a suburban community constituting an estimated 90,000 residents. Notably, the hospital has 220 beds and only 10 of these beds are in the IOCU room. Despite this imbalance, the hospital's weekly operation yields a capacity of 120%, with 40% of the patients experiencing delays that last between six and eight hours. Hence, the state of the ICU in the hospital reveals a dire state prompting strategy formulation and implementation to prepare for future uncertainties surrounding the healthcare sector.

Current versus Future Hospital State

Additional highlights from the case indicate that when remote ICU monitoring is adopted, it is likely to cost between $25,000 and $30,000. Imperative to note is that these costs are linked to each bed on an annual basis, equipping the respective rooms. Despite this threat to the financial stability of the hospital (even in the wake of a significant donation at hand), it

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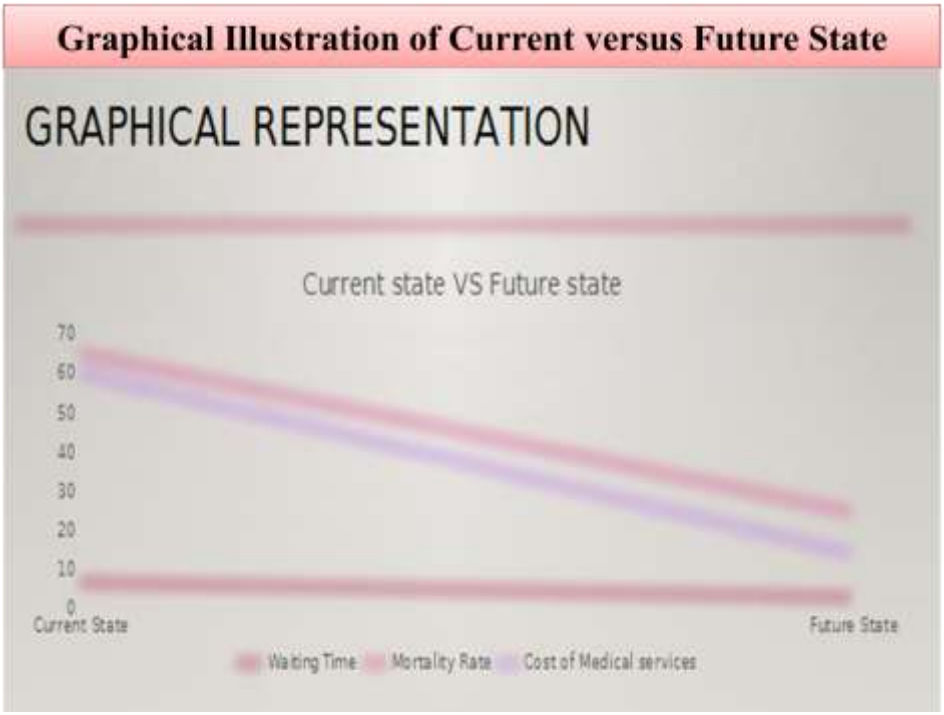
remains inferable that the adoption an implementation of this IT system will reduce costs substantially. For instance, the monitoring system will reduce the cost by $4,000 for each patient while a 30% reduction in the length of stay is projected. Thus, benefits accruing on the part of the patient are evident; aspects avowed by the chief financial officer. The following graph illustrates these projections in relation between the current and future state of the hospital.



Graphical Illustration of Current versus Future State

From the illustration, a near-uniform reduction in medical service costs, mortality rate, and waiting time is predicted. However, the cost of medical services is predicted to reduce more steadily when compared to the mortality rates and waiting time. When the latter two attributes are compared, the waiting time is likely to operate more favorably, implying that the lesser degree of steadiness in mortality rate reductions might be attributed to other external factors operating independent form events in the ICU section. Overall, benefits are predicted to arise from remote ICU monitoring, with patient groups at the greater benefit when compared to the hospital's financial and personnel benefits.

Impact of Remote ICU Monitoring

The impact on productivity is felt in terms of reductions in the mortality rate while competitiveness is evidenced by the capacity of computerized algorithms' detections to prompt early interventions by groups such as bedside nurses and intensivists. Similarly, the effect of competitiveness is felt in terms of reduced medication errors; with the latter associated with effective surveillance and the resultant clinical support in responsive units.

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Financially, the IT system is projected to yield cost reductions because of the shorter length of stay.

Conclusion

From the resultant evidence, most of the positive effects associated with remote ICU monitoring are felt by OR teams, surgical groups, intensivists, and patients. With medication errors and mortality rates reduced substantially, the length of stay reduces but this presentation has established that these relationships are likely to arise if the organization involves team members in decision making, offering further training about machine malfunctions to assure confidence and preparedness. The evidence is relevant in such a way that it sensitizes organizations about roles such as reduced lengths of stay in yielding cost reductions for patients and their families, augmented workplace relationships in prompting flexibility, relief, and motivation among bedside nurses, and reduced medication errors in steering improvements in the overall state of community health care service. In turn, the evidence prompts healthcare firms to facilitate and embrace such IT-related applications while responding to industry demands, keeping abreast with trends that emerge. The data presented is reliable because evidence has been collected from different units, hospitals, and practitioners or experts, ensuring that the demerit or limitation of subjectivity is shunned. In addition, the data is valid because qualitative and quantitative data have been collected by the consultant on first-hand bases, presenting the information in its original form. To ensure that the validity and reliability of such data, which promotes evidence-based decision making, is improved in future, this presentation recommends that the opinions of unit-specific groups such as OR teams, surgical teams, and bedside nurses are considered in future. In addition, external factors that could impact on the effectiveness of remote ICU monitoring as an IT system in healthcare should be examined in future to provide explanations regarding any varying degrees to which benefits are felt when hospital units adopt or embrace the system.

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