Will Quality Measures Debunk Quality Care in the Nursing Home Industry?

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ABSTRACT

This research analyzes publicly available information on the quality of services delivered by healthcare organizations. The accessibility and transparency of healthcare data is exponentially growing. Due to the complexity of different provider groups in healthcare, the focus is on the nursing home industry. A key objective of this research is to explore any association among the government-defined quality ratings, cost-effectiveness, and quality care provided by a nursing home. Quality and performance metrics for all nursing homes that receive reimbursements from CMS is in the public domain. The CMS purports that nursing homes with high overall star ratings provide excellent healthcare to their residents. A surprising result from this study found high-quality-rated nursing homes with more nurse hours per resident provided lower quality care than nursing homes, which had lower nursing hours per resident. The research also suggests that healthcare organizations, such as nursing homes, acquire business analytics (BA) capabilities for specific government metrics.

KEYWORDS

Health Informatics, Health Quality, Nursing Home

INTRODUCTION

Firstly, and in summary, this study analyzes publicly available information related to the quality of services delivered by healthcare organizations. Quality care in nursing homes have been an ongoing concern for decades by the public, the patients and by the government. This concern has been evidenced by very low nurse staffing ratios, poor clinical outcomes, and a high number of process or outcome-based deficiencies (Harrington et al. 2016). Second, the authors discuss specifically the quality and healthcare measures in the nursing home industry. By collecting publicly available data and examining the quality metrics, we aim to determine whether the quality metrics, such as the star rating, are aligned with domain expertise, (i.e., do the measures represent actual quality care).

The accessibility and transparency of healthcare data is exponentially growing due to federal regulations and federal mandates in order to make more data available for consumption by researchers and patients (U.S. Department of Health & Human Services, 2020). Government initiatives such as

the Health Data have yielded a repository with more than 1,000 data sets each with thousands of points for observation (Patel et al., 2014). Studies have suggested that the open data revolution will help the healthcare community by identifying health risk factors, improving health care quality and decreasing cost (Martin et al., 2014). In addition, the magnitude of data being created has led to an increase in data-driven quality improvement programs (Balasubramanian et al., 2015, Berwick et al., 2008). These initiatives are also changing the monetary aspect of healthcare systems. According to Finni, Walker, Staples and Moore (2018), healthcare managers such as rehabilitation managers must have the ability to understand regulatory guidelines in order to be successful in the payments of dealing with medically necessary services and their payments.

Additionally, the increasing number of reportable quality indicators has resulted in healthcare organizations building complex statistical models that can often be difficult to interpret (Mainz, 2003, De Vos et al., 2007). The models' that are being created can also be problematic due to various validation issues (Lutfiyya et al., 2007). Health care organizations often use limited resources to develop and maintain accurate metrics in order to receive reimbursement for services (Rubin et al., 2001, Mainz, 2003). Quality measures in nursing home healthcare, for example, are driven by methods of statistical analysis that require targeted measures for both population nuances and the special areas of nursing home medical care (Krumholz et al., 2006).

There is a growing concern by the government as well as the public over the reported low quality of care in nursing homes (Castle & Ferguson, 2010). According to the Institute of Medicine in 2019, the ability of the nurses to carry out their roles effectively is largely influenced by their work environment, adequate staff and resources, as well as supportive managers among other attributes. But concerns from the government and public may be self-evident since are approximately 15,600 nursing homes in the United States, with a capacity of 1.7 million beds, and that are occupied by 1.4 million residents (Harris-Kojetin et. al., 2016). With the increase in the number of residents comes an increased scrutiny of measures of quality. Thus, public reporting of quality indicators (QI), such as the star ratings, has become a focal point for discussions concerning all healthcare areas (Laschober et al., 2007).

Previous research has examined how to improve quality by using analytics in order to measure the skills and knowledge of nurses to enhance patient care (Carter-Templeton et. al., 2009). This study first reviews the uses of business analytics in healthcare as a growing trend for evidence-based medicine and population health. The information ascertained from this study may be used in the goal of improving healthcare quality in nursing homes (NH).

LITERATURE REVIEW

Numerous articles concerning a review of the literature on business analytics in healthcare and the importance of valid data within the healthcare industry. Digital data and information (Khajeheian, et al., 2018) in the healthcare industry continues to grow extensively (Ustundag and Cevikcan, 2017). The researchers conducted a Google Scholar search on academic article related to business analytics in healthcare in April 2020 and found a response rate of over 133,000 articles. In comparison, the same search was conducted in November 2016 and found slightly over 17,000 results, thus addressing the importance of this topic. The researchers also examined and summarized the literature surrounding the development of government-defined quality and performance metrics specifically related to nursing home health care.

Business analytics in healthcare has become essential to assist in the delivery of quality health care to nursing home patients as this task can contribution to the overall success of patient care. Some experts suggest that business analytics (BA) will become a primary solution in the future to managing the cost and efficiencies of the United States healthcare system (Raghupathi & Raghupathi, 2014). Further, studies have noted that business analytics will become a key basis of competition, innovation, and productivity for healthcare organizations (Kaplan & Porter, 2011).

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