International Journal of Production Economics 202 (2018) 59–68

Contents lists available at ScienceDirect

International Journal of Production Economics

journal homepage: www.elsevier.com/locate/ijpe

Benefits and implications of competing on process excellence: Evidence from California hospitals

Bogdan C. Bichescu [a,*], Randy V. Bradley [b], Antoinette L. Smith [c], Wu Wei [d]

[a] The University of Tennessee, Department of Business Analytics and Statistics, 229 Stokely Management Center, Knoxville, TN 37996, USA
[b] The University of Tennessee, Department of Marketing and Supply Chain Management, USA
[c] Florida International University, School of Accounting, USA
[d] AGL Resources, Atlanta, GA 30302, USA

ARTICLE INFO

Keywords:
Hospital competition
Operations strategy
Process excellence
Hospital market share and profitability
Regression analysis
Archival data

ABSTRACT

As the healthcare industry is in the midst of a shift to value-based payment models, hospitals face increasing pressure to balance strategic priorities and to improve both the effectiveness and efficiency of care delivery. To confront these challenges, hospitals are placing an increased emphasis on process excellence. We use process excellence to denote a hospital's ability to, on average, treat a patient in the most effective and efficient manner. We use actual improvements in cost per discharge (CPD), average length of stay (ALOS), and conformance quality (ConfQual), to assess changes in a hospital's level of process excellence. In this paper, we investigate empirically the association between process excellence and overall measures of hospital performance, including market share and profitability. To this end, we leverage secondary data sources and regression analysis to track over time the performance of 288 short-term acute care hospitals located in California. Our analysis leads to several important implications. First, we find that a hospital's focus on improving CPD and ALOS, is associated with higher inpatient market share, whereas improvements in ConfQual are negatively associated with market share. Second, improvements in CPD are associated with higher profitability while there is no direct relationship between improvements in both ALOS and ConfQual and profitability. Third, CPD is found to mediate the relationship between both ALOS and ConfQual and hospital performance. We further discuss the implications of this study for theory and practice.

1. Introduction

The U.S. healthcare industry is undergoing significant change, which is driven in part by a shift from traditional fee-for-service payments to alternative, value-based payment models, such as the Centers for Medicare and Medicaid Services (CMS) hospital value-based purchasing (HVBP). In contrast to fee-for-service payments, where hospitals were reimbursed by CMS based on the quantity of services offered with no regard to health outcomes, HVBP links financial incentives to hospitals' performance on a set of defined metrics that include clinical, operational, and patient-centered measures of hospital performance. According to HVBP criteria, low-performing hospitals that do not meet the performance targets set by the CMS risk reductions of up to 2% of the value of their CMS reimbursements, whereas high-performing hospitals receive incentive payments (Burwell, 2015).

The new HVBP reimbursement criteria are expected to significantly increase hospital competition and profoundly transform the way hospitals balance strategic priorities and manage care delivery. As criteria based on efficiency and effectiveness in care delivery processes are increasingly used to determine provider reimbursements, hospital administrators are compelled to respond to initiatives like HVBP by improving both the effectiveness and efficiency of care delivery (Centers for Medicare and Medicaid Services, 2011; Burwell, 2015; Gilman et al., 2015). One way by which hospitals can potentially accomplish this task is through process excellence. Consistent with Kirchmer (2011), we use process excellence to denote a hospital's ability to, on average, treat a patient in the most effective and efficient manner. Leveraging prior literature, we use efficiency to denote making choices among available alternatives that produce the largest result for the given application of resources, whereas effectiveness is the degree to which an organization

* Corresponding author.
E-mail addresses: bbichescu@utk.edu (B.C. Bichescu), rbradley@utk.edu (R.V. Bradley), smithal@fiu.edu (A.L. Smith), wwu3@vols.utk.edu (W. Wei).

https://doi.org/10.1016/j.ijpe.2018.05.013
Received 16 July 2017; Received in revised form 10 May 2018; Accepted 12 May 2018
Available online 17 May 2018
0925-5273/© 2018 Elsevier B.V. All rights reserved.

achieves its end objectives given certain constraints (e.g., Campbell, 1977; Simon, 1978). Consistent with the above definitions, we measure process excellence based on actual changes in cost per discharge (CPD), average length of stay (ALOS), and conformance quality (ConfQual) over a period of two years.

In more detail, CPD represents a measure of efficiency and a lower CPD indicates that a hospital can provide care to patients with less waste and higher cost efficiency. ALOS is a comprehensive measure of hospital performance, seen by some researchers as a proxy of both efficiency and effectiveness (e.g., McDermott and Stock, 2007). For example, a lower ALOS is indicative of a hospital's ability to treat patients with less waiting and potentially harmful delays, an illustration of efficiency (e.g., McDermott and Stock, 2007). Alternatively, a lower ALOS can also indicate that patients recover faster, with fewer complications, an illustration of effectiveness (McDermott and Stock, 2007; Nair et al., 2013; Stock et al., 2016). ConfQual is a measure of hospital compliance with care standards and best practices and is therefore a proxy for effectiveness. A higher ConfQual indicates that hospitals adhere more closely to evidence-based standards of care in treating patients, which has been shown to improve health outcomes (Chassin et al., 2010). CPD, ALOS, and ConfQual have been used widely in the literature as measures of operational performance and represent adequate proxies for a hospital's ability to efficiently and effectively discharge care processes (e.g., McDermott and Stock, 2007; Hussey et al., 2009; Kc and Terwiesch, 2011; Nair et al., 2013; Sharma et al., 2016; Senot et al., 2016b, etc.).

Prior studies in other industries have positioned process excellence at the intersection of efficient and effective work processes. For example, Mishra et al. (2016) suggests that achieving process maturity and excellence in the context of government technology projects requires a balance between cost, compliance, and scheduling. Krishnan (2013) uses the well-known example of Southwest Airlines to illustrate that process excellence can provide a competitive edge, arguing that because Southwest Airlines was able to offer timely, efficient, and effective services to their customers, essentially doing more with less, they were able to sustain growth and profitability.

There is a vast literature that takes a tactical approach by investigating the challenges and benefits of various process improvement initiatives, such as lean six sigma (e.g., DelliFraine et al., 2010; D'Andreamatteo et al., 2015; Dobrzykowski et al., 2016, and references therein), total quality management (e.g., Mefford, 1993; Carman et al., 1996; Zabada et al., 1998), business process re-engineering (e.g., Chan and Choi, 1997; Bertolini et al., 2011), etc., in healthcare organizations. However, few studies address the more strategic implications of process excellence, such as competitive positioning in the market place and profitability. Given the hyper-competitive market in which for-profit and not-for-profit hospitals compete for the same patients and providers, as well as the shifting revenue models, a process excellence focus is now more of an imperative. Therefore, in this study we seek to address this gap and investigate the effects of a strategic emphasis on process excellence on measures of hospital performance including competitive advantage, measured by inpatient market share and profitability.

To carry out the objectives of this study, we rely on archival data from the California Office of Statewide Health Planning and Development (OSHPD) and CMS Cost Reports. We employ panel data regression models to analyze clinical, operational, and financial performance data for 288 acute-care hospitals from California for the period spanning 2004–2011. We find that improvements in CPD and ALOS are associated with increases in inpatient market share, whereas improvements in ConfQual have an opposite, negative relationship with market share. We also find that only CPD is associated with profitability, such that hospitals that reduce their CPD tend to have better profitability. Conversely, improvements in ALOS and ConfQual are, however, not directly associated with profitability, but CPD is found to mediate the relationship between both ALOS and ConfQual and hospital performance. These findings suggest that process excellence can effectively drive a hospital's competitive position.

This study provides several contributions to theory and practice. First, this study contributes to the literature by being one of the first quantitative examinations of the benefits of process excellence on strategic competitive outcomes in hospitals. Second, our approach to measuring process excellence using outcomes (i.e. actual improvements in hospital CPD, ALOS, and ConfQual) is an advantage over prior studies that rely on proxies that are representative of intentions rather than achievements, such as Butler et al. (1996) and Butler and Leong (2000) which rely on surveys of hospital administrators to assess strategic orientation. Third, from a practical standpoint, this research provides insights to hospital administrators about the performance ramifications of a focus on process excellence, which is often viewed myopically as a cost mitigation approach, as opposed to strategically as a source of competitive advantage. The fourth contribution of this study is that it offers an empirical foundation to practitioners for understanding how the different components of process excellence relate to hospital performance. Specifically, we provide evidence to suggest that measures of process excellence, namely ALOS and ConfQual, are associated with higher profitability only indirectly via CPD and with higher market share both directly and indirectly via CPD.

The remainder of this paper is organized as follows. In Section 2, we provide background on the study and use logical arguments and prior literature to develop our hypotheses. In Section 3, we explain our data collection process, operationalize all relevant variables, and introduce our research methodology. In Section 4, we present our main results and findings, in Section 5 we discuss the main implications of our study and, finally, we conclude in Section 6 with study limitations and directions for future research.

2. Background and hypothesis development

Prior research in manufacturing has shown that lower production costs, higher and faster throughput, on-time delivery of finished goods are usual benefits associated with process excellence (Goyal and Deshmukh, 1992; Nagar and Rajan, 2001; Fullerton et al., 2003). Moreover, some scholars argue that a focus on process excellence can also enable firms to deliver higher quality in a more cost effective manner (Fullerton and McWatters, 2001; Fullerton et al., 2003; Flynn et al., 1995). Considering the benefits resulting from process excellence as documented in other industries, it is worth investigating whether healthcare can derive similar advantages from an emphasis on process excellence.

While healthcare has seen a vigorous application of process improvement concepts and techniques (Li et al., 2002), tactical concerns have dominated the research in healthcare operations (Dobrzykowski et al., 2014). For example, many studies focus narrowly on tactical issues relating to hospital cost containment (Thakur et al., 1986), capacity planning (Butler et al., 1996), or personnel scheduling (Heineke, 1995). This narrow focus resulted in a research gap between tactical and strategic investigations of operational decisions on hospital performance. A growing body of research that focuses on strategic operational implications arose to address the aforementioned gap. However, this literature base predominantly focuses on strategic aspects relating to quality of care and service focus or diversification (cf. McDermott and Stock, 2011; Kc and Terwiesch, 2011; Stock et al., 2016). Nair et al. (2013) examine the relationship between clinical quality and clinical flexibility, a proxy for service diversification, and cardiology unit operational performance as measured by length of stay and cost performance. They report a positive association between quality and operational performance, such that clinical quality and flexibility are associated with a lower average length of stay and clinical flexibility also contributes to lower average costs. In a related study, Clark and Huckman (2012) examine whether related diversification can potentially reconcile the tension between service focus and diversification in hospitals.

Chandrasekaran et al. (2012) and Senot et al. (2016b) investigate the implications of a strategic focus on clinical quality, generally measured as the level of conformance to standardized clinical procedures, and

Download English Version:

https://daneshyari.com/en/article/7355070

Download Persian Version:

https://daneshyari.com/article/7355070

Daneshyari.com