Chapter 3
Aligning the Perioperative Process to Hospital Strategy

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ABSTRACT

This chapter identifies how dynamic technological activities of analysis, evaluation, and synthesis, applied to internal and external organizational data, can highlight complex relationships within integrated hospital processes to target opportunity for improvement and ultimately yield improved capabilities aligned to hospital strategy. This case study examines process management practices of balanced scorecards and dashboards to monitor, improve, and align the perioperative process to overall hospital goals at strategic, tactical, and operational levels. Based on a 168-month longitudinal study of a 1,157 registered-bed academic medical center, this case study investigates the impact of integrated hospital information systems and business analytics to improve perioperative workflow efficiency, patient care perspective, stakeholder satisfaction, clinical operations, and financial cost effectiveness. The conclusion includes discussion of study implications and limitations.

INTRODUCTION

In the United States, the 2009 American Recovery and Reinvestment Act, the 2010 Affordable Care Act, the Joint Commission on Accreditation of Healthcare Organizations (TJC), and Centers for Medicare & Medicaid Services (CMS) require performance and clinical outcome reporting as evidence of healthcare provider quality, efficiency, and effectiveness (Blumenthal, 2012). Consequently, the resulting wide-

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spread information systems (IS) and information technology (IT) adoption across United States' hospitals further necessitates the need for value realization (CMS, 2014; Jones, Rudin, Perry, & Shekelle, 2014). Furthermore, hospital administration could benefit by considering the strategic IS and business alignment challenges experienced in other industries over the past decades (Kappelman, Nuygen, McLain, Mauer, Johnson, Snyder, & Torres, 2017) as well as within the healthcare industry (Bush Lederer, Li, Palmisano, & Rao, 2009). This study investigates the research question of how business process management (BPM) is an applicable approach to align perioperative stakeholder activities to execute and achieve hospital strategic goals.

A hospital's perioperative process provides surgical care for inpatients and outpatients during pre-assessment, pre-operative, intra-operative, and immediate post-operative periods. Accordingly, the perioperative sub-processes (e.g. pre-assessment, pre-operative, intra-operative, and post-operative activities) are sequential where each activity sequence paces the efficiency and effectiveness of subsequent activities. Furthermore, perioperative sub-processes require continuous parallel replenishment of centralized sterile supplies along with the removal and sanitation of soiled materials, instruments, and devices. As a result, a hospital's perioperative process is tightly coupled to patient flow, patient safety, patient quality of care, and stakeholders' satisfaction (i.e. patient, physician/surgeon, nurse, perioperative staff, and hospital administration).

Implementing improvements that will result in timely patient flow through the perioperative process is both a challenge and an opportunity for hospital stakeholders, who often have a variety of opinions and perceptions as to where improvement is needed. The challenge of delivering quality, efficient, and cost-effective services affects all healthcare stakeholders. Perioperative improvements ultimately affect not only patient quality of care, but also the operational and financial performance of the hospital itself. From an operational perspective, a hospital's perioperative process requires multidisciplinary, cross-functional teams to maneuver within complex, fast-paced, and critical situations—the hospital environment (McClusker, Dendukuri, Cardinal, Katofsky, & Riccardi, 2005).

Similarly from a hospital's financial perspective, the perioperative process is typically the primary source of hospital admissions, averaging between 55 to 65 percent of overall hospital margins (Peters & Blasco, 2004). Macario, Vitez, Dunn, & McDonald (1995) identified 49 percent of total hospital costs as variable with the largest cost category being the perioperative process (e.g. 33 percent). Given the rising cost of healthcare, the public demand for healthcare transparency and accountability, and the current economic environment—managing and optimizing a quality, efficient, flexible, and cost-effective perioperative process are critical success factors (CSFs), both operationally and financially, for any hospital.

This study highlights BPM practices of balanced scorecards (BSC) and dashboards within a hospital's perioperative process to align stakeholder activities to hospital strategic goals. Empowered individuals driven by integrated internal and external organizational data facilitate the case results. The investigation method covers a longitudinal study of an integrated clinical scheduling information system (CSIS) within the perioperative process of a large, teaching hospital (e.g. academic medical center). The implementation of an agile CSIS and subsequent contextual understanding of the perioperative process and its sub-processes prescribed opportunity for measured improvements. Specifically, the extension of business analytics into BSCs and dashboards at different levels (e.g. strategic, tactical, and day-to-day operations), coupled with internal and external best-practice benchmarks, provide the framework for targeting improvement opportunities and evoking improvement changes to the perioperative process. The planning and development of the BSCs and dashboards also provide change dynamics for evalua-