

# Chapter 56

## A Balanced Perspective to Perioperative Process Management Aligned to Hospital Strategy

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### ABSTRACT

*Dynamic technological activities of analysis, evaluation, and synthesis can highlight complex relationships within integrated processes to target improvement and ultimately yield improved processes. Likewise, the identification of existing process limitations, potential capabilities, and subsequent contextual understanding are contributing factors that yield measured improvement. Based on a 120-month longitudinal study of an academic medical center, this study investigates how integrated information systems and business analytics can improve perioperative efficiency and effectiveness across patient quality of care, stakeholder satisfaction, clinical operations, and financial cost effectiveness. This case study examines process management practices of balanced scorecard and dashboards to monitor and improve the perioperative process, aligned to overall hospital goals at strategic, tactical, and operational levels. The conclusion includes discussion of study implications and limitations.*

### 1. INTRODUCTION

A hospital's perioperative process provides surgical care for inpatients and outpatients during preoperative, intra-operative, and immediate post-operative periods. Accordingly, the perioperative

sub-processes (e.g. preoperative, intra-operative, and post-operative activities) are sequential where each activity sequence paces the efficiency and effectiveness of subsequent activities. As a result, a hospital's perioperative process is tightly coupled to patient flow, patient safety, patient quality of

DOI: 10.4018/978-1-4666-8756-1.ch056

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 et al., 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 et al. (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.

Recently, the focus of healthcare in the United States has shifted toward monitoring and improving clinical outcomes to meet new regulatory and reimbursement requirements. Likewise, hospitals in the United States must report and improve clinical outcomes more now due to the American Recovery and Reinvestment Act of 2009 and the Joint Commission on Accreditation of Healthcare Organizations (TJC) / Centers for Medicare & Medicaid Services (CMS) core measures. These

performance and reporting challenges require leveraging information systems (IS) and technologies (IT) to meet these demands. Furthermore, hospital administration could benefit by considering the strategic IS and business alignment challenges experienced in other industries over the past decades (Luftman & Ben-Zvi, 2010) as well as within the healthcare industry (Bush, 2009). With respect to hospital IS/IT alignment, this study investigates the research question of how business process management (BPM) is an applicable approach for perioperative process management as well as overall hospital's strategic vision execution with monitored clinical outcomes.

This study highlights BPM practices of balanced scorecards (BSC) and dashboards within a hospital's perioperative process. 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 evaluation and improvement to the overall perioperative process. This case study also identifies complex dynamics within the perioperative process nested in the hospital environment.

The following sections review previous literature on BPM and BPM efforts in healthcare, as well as healthcare performance indicators and quality measures. Following the literature review, we

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