The Balanced Scorecard: A Multidimensional Tool for Performance Improvement in Pediatric Anesthesia

Author(s): Anna M. Varughese M.D., MPH, C Dean Kurth M.D.

Affiliation(s): Cincinnati Children’s Hospital Medical Center and the University of Cincinnati, Cincinnati, Ohio

Introduction:
Continuous performance assessment and improvement are critical to the survival of all organizations. An assessment tool the health care industry has started to use is the Balanced Scorecard (BSC). The authors present their BSC, a multidimensional framework linking their department’s values and goals with day-to-day activities. The BSC measures performance along multiple dimensions and the results are used to drive change and improvement.

Methods:
Our BSC, implemented over the past 2 years, contains indicators for patient health outcomes (clinical and functional), service quality, productivity, efficiency and work-life balance. The Institute of Medicine’s six aims for improvement (safety, timeliness, efficiency, equity, effectiveness and patient-centeredness) served as the basis for our indicators.
- Clinical care indicators (post-operative respiratory complications, anesthesia adverse event rate and compliance with antibiotic administration to reduce surgical site infections) address patient safety.
- Functional status indicators address anxiety and pain. Anxiety is measured by the quality of the induction process, and quality of pain management is measured by post-operative pain scores.
- Service quality indicators include parental satisfaction and discharge times for common ENT procedures.
- Efficiency indicators include patients assessed per nurse practitioner per day, relative value units per FTE anesthesiologist per day, and concurrency (ORs to anesthesiologists).
- Staff well-being indicators include time components (staff release times and delivery of scheduled academic time).

Results/outcomes:
Improvement from baseline on most scorecard indicators (see Table).
- Clinical care indicators: % of patients with post-operative respiratory complications decreased from 9.8 at baseline to 2.2. Compliance with antibiotic administration increased from 60% at baseline to 98%.
- Functional status indicators: % of children experiencing distress on induction of anesthesia decreased from 7 at baseline to 2.
- Service quality indicators: % of parents highly satisfied increased from 84 at baseline to 95.
- Cost/efficiency indicators: relative value units per FTE anesthesiologist per day increased from 68 at baseline to 78.
Discussion:
Presentation and discussion of BSC data at quarterly staff meetings enables us to implement and monitor process improvement initiatives as compared to national benchmarks. Financial incentives are linked to performance improvement goals for individuals and for the department. Balance is the key objective (i.e., increasing efficiency should not adversely impact parent satisfaction or staff well-being), and, as a result, the BSC is an evolving measurement tool, with existing indicators refined and new indicators added. A key future initiative is to automate both the data collection and analytical systems.

Summary:
The BSC links mission with strategy and operations, and answers the question, “How well are we doing what we professed and planned to do?” Critical to success are a high level of organizational commitment to continuous improvement, individual ownership of the indicators and the process, and strong IT support. The authors believe the BSC is a critical tool for continuous improvement easily adapted in any health care environment.

References: