

Success stories

Efficiency efforts improve staff satisfaction with turnover time

Cost mitigation has become a priority in the American healthcare industry, and addressing inefficiencies is a popular way to curb the high cost of medical care. Decreasing turnover time between cases may pave the way for additional cases to be scheduled, theoretically leading to increased revenue for the hospital. However, the literature demonstrates conflicting evidence about whether hospitals actually realize this financial benefit.

What's more certain is that lengthy turnovers are a major source of employee dissatisfaction in the OR. Studies have shown that staff perceptions of how long turnovers take are often inaccurate, erring on the side of overestimation. Therefore, it is possible that the minor reductions in turnover time (TOT) most often achieved by standard quality improvement (QI) interventions might not correspond to increased staff satisfaction.

As part of a larger staff satisfaction analysis at the University of Wisconsin Hospital and Clinics in Madison, we investigated whether efficiency projects focused on reducing TOT would improve satisfaction among OR nurses, surgeons, and anesthesiologists.

Our academic institution is a 505-bed facility with 36 operating rooms, of which 9 are in our hospital outpatient department. Efficiency projects focused on the main inpatient surgical suites.

Our analysis found that, although reductions in TOT were relatively small, staff satisfaction increased significantly.

Tracking TOT

We looked at results of an annual survey for the years 2012 to 2014 that was distributed to nurses, surgeons, and anesthesiologists. The survey consisted of 29 questions across eight domains: quality, efficiency, scheduling, courtesy, responsiveness, communication, technology, and overall satisfaction.

The questions were structured as follows: "How would you rate...?" with possible responses of "outstanding," "excellent," "good," "average," or "poor."

Our analysis focuses only on the question, "How would you rate the OR turnover times?"

In 2012, a multidisciplinary team was formed and began meeting biweekly to discuss and implement QI projects. Reducing inpatient OR TOT was selected as the top priority because it was the poorest rated item in the 2012 staff satisfaction survey. Examples of projects implemented to address this issue included decreasing handoff time between the preoperative holding area and the OR, improving the environmental services workflow, streamlining room setup processes, and standardizing the handoff process from the OR to the postanesthesia care unit.

The most successful intervention was the use of clock timers on the electronic in-room monitors in each OR. These timers provided real-time feedback to staff about the progress of the turnover, reinforced expectations, and created accountability for turnover times.

A predetermined TOT goal of 35 minutes was established regardless of surgical service. The clocks were started upon patient exit from the OR and stopped when the next patient entered. The times were then tracked by service and were made visible at the main OR control desk for staff to see.

In 2012, average turnover time in the inpatient operating room was 51 ± 20 minutes ($n = 2,081$ turnovers), compared to 43 ± 19 minutes ($n = 3,338$ turnovers) in 2014. The 8-minute reduction in TOT achieved by the OR teams' efficiency interventions represented a 16% improvement ($P < 0.001$, 95% CI).

Survey responses

Over 3 years, there were 322 total respondents to the annual staff satisfaction survey. The number of respondents totaled 94, 102, and 126 in 2012, 2013, and 2014, respectively, with 46, 43, and 64 from nursing; 35, 40, and 46 from surgery; and 13, 19, and 16 from anesthesiology for those years.

The primary outcomes of interest included average TOT and staff responses to the satisfaction survey. Survey responses were converted into scores ranging from 1 to 5, with 1 corresponding to “poor” and 5 to “outstanding.” Secondary outcomes of interest included how these responses differed by OR staff discipline and how they changed over time.

Satisfaction with OR turnover times improved from baseline in all staffing groups. From 2012 to 2014, the mean satisfaction score improved from “poor” to “good” both overall and among surgeons and anesthesiologists specifically. Nurses reported that satisfaction increased from “average” to “outstanding” over the same period.

The proportion of respondents answering “outstanding,” “excellent,” or “good” (the “above-average” responses) between 2012 and 2014 increased from 33% to 67% among nurses, from 22% to 59% among surgeons, from 15% to 63% among anesthesiologists, and from 26% to 63% overall.

Within these above-average responses, each of the three disciplines demonstrated increases in the proportion of “outstanding” responses from start to end of the study. In each discipline, “outstanding” responses increased from 2012 (range of 0% to 2% between disciplines) to 2014 (19% to 33%). Similarly, responses of “poor” in all three disciplines dropped from the 2012 rate of 24% to 51% to the 2014 rate of 3% to 17%.

The assessment of TOT satisfaction was consistent between disciplines ($P = > 0.05$, not significant). All three disciplines experienced a similar level of dissatisfaction prior to the improvements and a similar level of satisfaction with the reduced TOT at study completion.

Implications of results

We demonstrated that QI initiatives can improve OR efficiency by decreasing turnover time between operations. Our team learned that providing real-time performance feedback is critical to the success of these efforts.

Despite apparently small reductions in TOT, the impact on staff satisfaction was significant. These improvements were consistent across disciplines, and improved with each incremental TOT reduction.

By having staff rate turnovers as “poor,” “outstanding,” or in between, this type of analysis permits administrative leadership to use data-driven decision making to focus staff satisfaction improvement efforts.

By including both physicians’ and nurses’ opinions about turnover processes and success, the QI team was able to increase buy-in from all staff, and provide a more comprehensive satisfaction report in order to prioritize improvement efforts.

Various studies have reported turnovers ranging from 27 minutes to 52 minutes. Therefore, it becomes difficult for administrators and staff to know which goals are realistic and will produce the most desirable results.

This issue is further complicated by the finding that making turnover times as short as possible may not be the best approach.

Dexter cautioned that efforts aimed at reducing TOT to less than 30 minutes may themselves have significant monetary costs, thus diminishing any incremental savings, which tend to be small to begin with.

In a pilot study conducted by Cendán and Good as part of a more comprehensive analysis of the caseload impacts of reducing turnover times, staff achieved an average TOT of 16 ± 10 minutes. However, the authors found that staff felt this turnover was too short and unsustainable. This finding underlines the importance of measuring staff satisfaction throughout and after implementation of efficiency initiatives.

Dexter and his team have contributed much of the seminal work assessing cost implications of various OR efficiency interventions. According to this work, reductions in average turnover time of 3 to 9 minutes are predicted to produce savings of 0.8% to 1.8% annually, corresponding to \$52,000 to \$151,000 (in 2001 USD) for anesthesia staffing costs alone.

With our average turnover time reduction of 8 minutes, adjusted for the current value of the dollar (US Department of Labor, Bureau of Labor Statistics Inflation Calculator), his findings suggest that our institution could save approximately \$70,000 to \$203,000 per year just in anesthesia staffing costs.

Dexter argues that this amount is inconsequential in the context of typical hospital OR budgets, but we maintain that improving staff satisfaction has some indirect effects on costs in addition to yielding other important benefits.

Our findings suggest that minor adjustments to surgical practice systems may promote improved working environments, thus decreasing employee turnover and costs.

Future efforts should seek to determine the relationship between efficiency improvements and overall job satisfaction among OR staff. Additionally, development of a benchmark TOT that maximizes efficiency, patient safety, and staff satisfaction would provide much-needed guidance to hospitals striving for economic and quality improvements. This metric could be used to help hospitals share best practices and motivate OR teams to achieve a common, validated goal.

Even if efficiency efforts aimed at reducing TOT yield small improvements and little revenue increase, the impact on camaraderie and employee satisfaction with turnover time is meaningful.

Continued attention to keeping turnover times in check is likely to favorably maintain the interdisciplinary work environment.



Alexandra J. Douglas, BS, is a medical student at the University of Wisconsin School of Medicine and Public Health in Madison.



Roger Shoff is the operating room data coordinator at the University of Wisconsin Hospital and Clinics and University of Wisconsin Clinical Science Center in Madison.



Barbara Pankratz, MSN, RN, CNOR, is VP, perioperative services, at Phoenix Children's Hospital.



Jeff Fenne, MHA, RN, CNOR, is associate director of nursing at the Gulf Coast Regional Medical Center in Panama City, Florida.



Charles P. Heise, MD, FACS, is professor of surgery and director of surgical operations at the University of Wisconsin Hospital and Clinics in Madison.

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