

Fast-Tracking Ambulatory Surgery Patients Following Anesthesia

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Purpose: The purpose of this process improvement project was to introduce and evaluate the efficacy of fast-tracking ambulatory surgical patients in a community hospital.

Design: An observational pre-post design was used, in which patient data from a reference period (pre-fast-tracking) was compared with patient data collected during an implementation period (post-fast-tracking).

Methods: Anesthesia providers were trained to use a tool to assess patients for eligibility to bypass the postanesthesia care unit (PACU). Fifty-nine patients met the fast-track criteria during the implementation period and were transferred directly to the ambulatory care unit from the operating room.

Finding: During the fast-track implementation period, a PACU-bypass rate of 79% was achieved, and a significant decrease in the total number of patients held in the operating room and in total length of stay was noted.

Conclusions: Results suggest that fast-tracking is a suitable intervention to increase work flow efficiency and decrease both patient and hospital costs while promoting a more rapid discharge from the facility.

Keywords: fast-tracking, ambulatory surgery, anesthesia, white fast-track score.

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WITH HEALTH CARE REFORM ON THE HORIZON and time becoming the new currency, hospitals across the United States are placing an increased emphasis on speed and efficiency in the ambulatory surgery (AS) setting. In an effort to decrease the time spent in the institutional

recovery process after anesthesia in the AS population, a process known as fast-tracking has been successfully implemented in health care facilities of all types. Fast-tracking refers to assessing patients as they emerge from anesthesia for readiness to “bypass” the postanesthesia care unit (PACU) and go directly to the ambulatory care unit (ACU) to facilitate a faster discharge from the facility. The PACU is a high acuity recovery unit in which there are low nurse-to-patient ratios and continuous monitoring. In comparison, the ACU is a lower acuity unit, with minimal monitors and higher nurse-to-patient ratios because of fewer patient care requirements. Most AS patients who meet the fast-track criteria to bypass the PACU undergo monitored anesthesia care (MAC) or intravenous anesthesia (IVA), in which short-acting anesthetic drugs are administered with the goals of providing analgesia and sedation but also ensuring rapid recovery without side effects.¹

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A 2006 National Survey of AS facilities reported 34.7 million AS visits annually in the United States, of which 57.2% were hospital based.² With the changing environment in health care and the shift from inpatient to outpatient procedures, current literature supports fast-tracking AS patients when appropriate to return them directly to the ACU from the operating room (OR).³ Considering the annual volume of ambulatory surgical procedures, fast-tracking eligible patients could improve the efficiency of the discharge pathway leading to decreased costs to patients, hospitals, and third party payers and expedited discharge from the facility.

The financial advantages of fast-tracking patients have not been fully studied. However, with the shift from cost-based payment to bundled payment, fast-tracking is a potential mechanism for decreasing costs, while maintaining patient safety in AS patients undergoing certain types of anesthesia. Some third party payers have remodeled reimbursement strategies into a tiered format. To receive a tier 1 classification as a preferred hospital, the institution must score 80 of 100 points on a 100-point scale based on Blue Cross/Blue Shield standards.⁴ The scale takes into account how hospitals compare with one another on different criteria including quality of care, infection control, heart attack or stroke response, safety, accident prevention, and others.⁴ One key element taken into consideration in this scoring system is a hospital's willingness to accept lower reimbursement for services provided. By reducing patient charges and minimizing use of resources through the use of fast-tracking, hospitals would be able to accept lower reimbursement for services rendered, increasing their score on the scales and potentially qualifying as a preferred, or tier 1, hospital. Achieving tier one status assures maximum reimbursement as well as the possibility for increased patient referrals. The purpose of this process improvement project was to initiate fast-tracking, and to evaluate the efficacy of fast-tracking AS patients in a community hospital.

Review of the Literature

Fast-tracking has been studied since 1996 with clear evidence to support the process. Multiple studies have demonstrated an increased PACU-bypass rate, and subsequent decrease in length of stay (LOS), following the implementation of fast-

tracking. Apfelbaum et al⁵ conducted a multisite prospective trial using a convenience sample of 4,862 patients to determine whether AS patients could safely bypass the PACU. The study outcomes included PACU-bypass rates and adverse events. The overall bypass rate increased from 15.9% to 58.9% over a 3-month period, suggesting that not all patients undergoing elective same day surgery required the intensive nursing care provided in the PACU setting.⁵ Song et al⁶ reported similar findings from a study in which 207 AS patients were randomized to routine or fast-track groups and demonstrated the total time from the end of anesthesia to discharge home was significantly decreased in the fast-track group.

Fredman et al⁷ specifically addressed geriatric AS patients (age >65 years) in order to assess the probability of fast-tracking these patients. The study was a prospective, randomized, double-blind study of 90 geriatric patients and concluded, despite age-related physiologic changes, advanced age alone is not a contraindication to fast-tracking outpatients.⁷ Duncan et al⁸ examined the impact of the use of short-acting anesthetic drugs, which are most often used in MAC/IVA cases, on adult AS patients meeting fast-track criteria. They analyzed a cohort of 100 patients and found no morbidity was demonstrated with the use of these drugs while achieving an 83% PACU-bypass rate in a community hospital setting that most closely resembles the environment at our institution. No specific patient characteristics were identified that could be used to exclude patients from being fast-tracked, demonstrating that patient characteristics could not be used as a screening tool for the process.

Variations in the studies of fast-tracking included types of anesthesia administered and location of "fast-track areas." The types of anesthesia delivered included: MAC/IVA, general, and regional, which included spinal anesthesia as well as peripheral nerve blocks. The range of fast-track areas included "roped off" areas in the actual PACU to separate ACU recovery areas of the hospital. Despite the differences in types of anesthesia and fast-track locations, all studies found that fast-tracked patients experienced decreased LOS without adverse events or morbidity, and evidence consistently supported implementation of fast-tracking in the AS population.⁵⁻⁹

In 1970, Jorge Antonio Aldrete, MD created the Aldrete Scoring system to establish PACU discharge criteria for patients who had undergone anesthesia.¹¹ The Aldrete score is now commonly used in 74 countries as a scoring system for PACU discharge.¹² In 1995, Dr. Aldrete revisited and modified the score by incorporating oxygen saturation in place of the respiration parameter in the original scoring system. In 1999, White expanded the Aldrete score to incorporate pain and emesis assessments to create his own tool to specifically assess AS patients for fast-tracking, as these assessments were noted as common reasons for delayed discharge among AS patients.¹⁰ The Modified Aldrete Score (MAS) and the White Fast-Track Score (WFTS) are the two instruments most often used in research to determine the eligibility of a patient for fast-tracking. Fast-track studies using these instruments have been conducted in all types of health care settings. A quasi-experimental study of 216 subjects, comparing the MAS and WFTS assessment tools, found that time to achieve fast-track criteria was significantly longer when using the MAS tool.¹⁰

Methods

Study Design and Sample

This process improvement project used an observational, pre-post design in which patient data from a reference period was compared with the same patient data collected during an implementation period in a convenience sample of 150 patients. Seventy-five patients were evaluated for fast-track eligibility using the WFTS tool during the reference period but continued to follow the recovery pathway that was currently in place at our institution requiring all patients undergoing anesthesia to go to the PACU before the ACU. Following completion of the reference period, a fast-track protocol was implemented for AS patients. Seventy-five patients were evaluated by anesthesia providers using the WFTS tool in the OR during the implementation period, and those that met the criteria to bypass the PACU were transferred directly to the ACU.

Patient selection was based on the ambulatory status of the patients and the type of anesthesia they received. Inclusion criteria included adult patients 18 years of age or older and local, MAC, peripheral

nerve block, or a combination of these anesthetics. Exclusion criteria included any patient who was not an AS patient (same day admission patients, inpatients, and observation patients) and any patients undergoing general, spinal, or epidural anesthesia.

Organizational Setting

The setting for this process improvement project was a 369-bed acute care community hospital, which is part of a large academic system in the Southeast. The institution performed 8,466 surgeries in 2012, of which 2,975 were AS procedures. There are 18 ORs and a maximum of 10 PACU beds are available for patient recovery on any given day. The ACU consists of 15 beds available for preoperative preparation of AS patients and postoperative preparation for discharge.

Traditionally, patients presenting for outpatient surgery undergo preoperative evaluation and preparation by the anesthesia and nursing staff in the ACU before transfer to the OR, and are then ultimately taken to the PACU following their procedure. If the PACU does not have a bed immediately available for the patient postoperatively, the patient is put on "PACU hold," requiring the patient to remain in the OR until a bed space is available. This hold causes delays in OR turnover and results in unnecessary OR and anesthesia charges. With the implementation of fast-tracking for patients who do not require the intensive care provided in the PACU, there would be an option for postoperative patients who meet specific criteria to bypass the PACU and return to the ACU creating less "congestion" in the PACU.

The Intervention

During this process improvement project, we implemented and evaluated the efficacy of fast-tracking of AS patients. Buy-in from ACU nurses and management, anesthesia providers, and PACU nurses were achieved by educating these groups on the potential benefits of fast-tracking. The development of written guidelines for AS patient fast-tracking was based on the feedback received from ACU nurses and managers and anesthesia providers, as well as recommendations made by the American Society of PeriAnesthesia Nurses.¹³ Before data collection for the reference period, the ACU and anesthesia staff attended

educational in-services where they were introduced to the WFTS tool and educated on its use. Categories on the WFTS include the patient's: (1) level of consciousness; (2) physical activity; (3) hemodynamic stability; (4) respiratory stability; (5) oxygen saturation; (6) pain assessment; and (7) emesis assessment. The patient is assessed on a scale of 0 to 2 in each category.¹⁴ A patient scoring 1 or 2 in each category and a minimum cumulative score of 12 is considered suitable for fast-tracking based on WFTS criteria. The WFTS was chosen

because it incorporates the assessment of pain and emesis and has been found to be more sensitive and selective than the MAS tool for assessing eligibility to bypass the PACU¹⁴ (Table 1).

Assessment and Measures

The primary outcomes assessed in this process improvement project included: (1) PACU-bypass rate; (2) PACU hold incidence and duration (time in minutes); (3) LOS following the surgical procedure; and (4) overall cost comparison between the reference and fast-track groups. Secondary outcomes were to determine the WFTS inter-rater reliability between the anesthesia providers and the ACU staff nurses, and to describe the demographics of patients who successfully fast-tracked and determine common traits.

Implementation

Following approval from the Institutional Review Board and completion of all educational in-services, fast-tracking with use of the WFTS was trialed during a 3-week "reference period." This period served as a training phase during which anesthesia providers and ACU staff used the WFTS tool to identify patients that met fast-track criteria. Although 75 patients who fit the inclusion criteria for fast-tracking were assessed for their eligibility to bypass the PACU, they were taken from the OR to the PACU and then to the ACU (ie, received the current institutional standard of care). On arrival in the ACU, ACU nurses had the opportunity to practice using the WFTS tool by evaluating the patients for their acceptability for fast-tracking. Each patient therefore received two separate WFTS assessments, one by the anesthesia staff in the OR and one by the ACU staff on admission to the ACU. The reference period also allowed for determination of the percentage of patients who could have bypassed the PACU during this period.

Following the reference period, the fast-track protocol was implemented for all AS patients. Seventy-five patients were assessed during the 3-week implementation period. Patients were assessed by anesthesia providers in the OR at the end of the procedure using the WFTS, and those who met the criteria (at least 1 or 2 in each category and a score ≥ 12) were transferred directly to the

Table 1. White Fast-Track Score

Criteria	Score
Level of Consciousness	
Awake and oriented	2
Arousable with minimal stimulation	1
Responsive only to tactile stimulation	0
Physical activity*	
Able to move all extremities on command	2
Some weakness in movement of extremities	1
Unable to voluntarily move extremities	0
Hemodynamic stability	
Blood pressure $\pm 15\%$ of baseline MAP value	2
Blood pressure $\pm 15\%$ to 30% of baseline MAP value	1
Blood pressure $\pm 30\%$ below baseline MAP value	0
Respiratory stability	
Able to breathe deeply	2
Tachypnea with good cough	1
Dyspneic with weak cough	0
Oxygen saturation status	
Maintains value $>90\%$ on room air	2
Requires supplemental oxygen (nasal prongs)	1
Saturation $< 90\%$ with supplemental oxygen	0
Postoperative pain assessment	
None or mild discomfort (0 to 3)	2
Moderate to severe pain controlled with IV meds (4 to 7)	1
Persistent severe pain (8 to 10)	0
Postoperative emetic symptoms	
None or mild nausea with no active vomiting	2
Transient vomiting or retching	1
Persistent moderate to severe nausea and vomiting	0
Total score [†]	

MAP, mean arterial pressure.

*Moves all extremities excluding the block extremity if the peripheral nerve block is administered.

[†]A minimum score of 12 (no score < 1 in any individual category) is required for a patient to be fast-tracked.

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ACU. On admission to the ACU, the nursing staff assessed the patient using the WFTS tool.

To match each patient's two WFTS assessments, the forms were initially stapled together and pre-coded. For the reference period, the tools were coded with an "R" for reference, followed by patient number (eg, 1), followed by "ACU" or "ANES" to determine if the tool was completed by the ACU nurse or the anesthesia provider. The same coding format was used during the implementation period. The timing and processing of the WFTS forms were as follows: the anesthesia provider completed the first tool just before leaving the OR. Patients were taken to the PACU during the reference period and both WFTS forms were given to the PACU nurse. The PACU nurse noted the time the patient arrived in the PACU. Once the patient met the discharge criteria from the PACU, the PACU nurse recorded the time the patient left the PACU and deposited the first WFTS in a locked box in the PACU. On the patient's transfer to the ACU, the second tool was completed by the ACU nurse. When the patient met the discharge criteria from the ACU, the ACU nurse recorded the time the patient met the criteria and deposited the form in a locked box in the ACU.

For the implementation period, the anesthesia provider again completed the first WFTS just before leaving the OR, but if the patient met fast-track criteria they were taken directly to the ACU. The ACU nurse then completed the second WFTS at the time the patient was admitted to the ACU. If the patient did not meet the fast-track criteria in the OR when assessed by the anesthesia provider they were taken to the PACU for recovery. Once the patient met PACU discharge criteria, the PACU nurse recorded the time the patient left the PACU and deposited the first WFTS in the locked box in the PACU. On the patient's transfer to the ACU, the second WFTS was completed by the ACU nurse. When the patient met the hospital discharge criteria, the ACU nurse recorded the time the patient met discharge criteria to determine postoperative recovery time and deposited the form in a locked box in the ACU.

Data collection included the WFTS score, the time the patient left the OR, and the time they met discharge criteria from the ACU. The ACU discharge time was the time that the patient was as-

essed by the ACU nurse and met discharge criteria, not when the patient actually left the hospital, as extraneous factors often impede the patient leaving the hospital at the time they are considered discharge eligible. These factors include not having a ride home, discharge orders requiring a physician's signature, and ACU nurses busy with other patients. Patient characteristics collected for analysis included procedure and anesthesia type, American Society of Anesthesiologist's physical status classification, history of postoperative nausea and vomiting, gender, age, and comorbidities. Patient comorbidities were collected by preoperative clinic nurses using a 50-item checklist covering all major systems. This checklist was reviewed and corroborated by a staff anesthesiologist during the preoperative interview.

The amount of time patients were placed on PACU hold was also collected as part of this project. Each time a patient was placed on PACU hold because of unavailable bed space, the OR number and the time the OR was put on hold were recorded on a separate document. The PACU arrival and discharge times were added to this document and used to determine PACU hold in minutes.

Statistical Analysis

Data were analyzed using SPSS 20.0 software. Descriptive statistics such as frequencies, means, and standard deviations were determined for PACU-bypass rates, PACU hold incidence and duration, LOS following the surgical procedure, and overall cost. Before project implementation, no patients were being fast-tracked to the ACU; therefore, the rate of PACU bypass (zero, 0) during the reference period was used to determine the volume of AS patients that could have benefited from this practice change using a Fischer exact test. The incidence of PACU hold during the reference period (required PACU admission) was compared with the incidence of PACU hold during the implementation period (ability to bypass the PACU) using a Mann Whitney test as the data were not normally distributed. A Student *t* test was used to compare the time to discharge following the surgical procedure (the patient's "out of OR" time to "discharge home" time) between the fast-track eligible patients in the reference group and actual fast-tracked patients in the implementation group. A cost analysis was conducted by calculating the

percent change of overall cost-to-patient between the two groups. A Kappa test was conducted to determine inter-rater reliability of the WFTS tool between anesthesia provider and ACU nurse scores for patients actually fast-tracked during the implementation period. A two sample *t* test was used to compare the characteristics between the fast-track eligible patients and the non fast-track eligible patients. The sample (WFTS tools) was collected from a total of 150 patients: 75 patients in the reference group and 75 patients in the implementation group. The alpha level was set at $P < .05$.

Results

Outcome 1: PACU-Bypass Rate

There were 61 of 75 (81%) patients eligible for fast-tracking during the reference period, and 59 of 75 (79%) patients actually fast-tracked during the implementation period. There was no difference in the percentage of patients who could be fast-tracked when comparing the reference to implementation periods ($P = 1.0$).

Outcome 2: PACU Hold Incidence and Time

The reference period had 18 incidences of PACU hold compared with the implementation period that had only three. The 18 incidences of PACU hold during the reference period had a total hold time of 350 minutes and the 3 incidences during the implementation period had a total hold time of 23 minutes. There was a significant decrease in PACU hold incidences ($P = .02$) and a significant decrease in PACU hold duration ($P = .02$), during the implementation period.

Outcome 3: Length of Stay

When comparing the LOS following the surgical procedure between the fast-track eligible patients

during the reference period ($n = 61$) and the patient's actually fast-tracked in the implementation period ($n = 59$), there was a significant decrease in LOS for the implementation period ($P = .043$; Table 2).

Outcome 4: Inter-rater Reliability

A comparison of WFTS scores between anesthesia providers and ACU nurses of patients fast-tracked during the implementation period ($n = 59$) resulted in a kappa value of 0.966. Of the 59 patients that met fast-track criteria during the implementation period and were fast-tracked, the ACU nurses and anesthesia providers agreed that patients met criteria (score ≥ 12) in 98% of the cases.

Characteristics

Data from the reference and implementation periods were combined to compare patient traits to determine common characteristics between fast-track eligible and non-fast-track-eligible patients. The fast-track eligible group contained 120 patients, and the non-fast-track-eligible group contained 30 patients. No significant differences were found when comparing age, American Society of Anesthesiologist physical status, gender, procedure type, anesthesia type, or history of postoperative nausea and vomiting between the two groups. The non-fast-track-eligible patients had significantly more (mean = 4.47, SD = 2.52) comorbidities than the fast-track eligible patients (mean = 3.23, SD = 2.58), ($P = .019$; Table 3).

Discussion

The overall goal of this project was to improve the efficiency of the postoperative recovery process by implementing a fast-tracking protocol while maintaining patient safety. Expected benefits of the

Table 2. Comparison of ACU and Postoperative Length of Stay (Minutes) Between the Reference and Implementation Groups

Postoperative Length of Stay	Group	N	Mean	SD	Significance (<i>P</i> value)
ACU total time	Reference group FT eligible	61	70.54	34.47	.014
	Implementation group FT	59	89.19	41.63	NS
Total postoperative time	Reference group FT eligible	61	106.34	40.38	NS
	Implementation group FT	59	93.93	41.08	.043

NS, not significant; ACU, ambulatory care unit; FT, fast-track; N, number; SD, standard deviation.

Table 3. Demographic Data

Demographic	Fast-Track	Non-Fast-Track	All	Significance (<i>P</i> value)
Male/female	43/77	9/21	52/98	NS
Age (mean years \pm SD)	55.7 \pm 16.3	57.5 \pm 16.1	56.1 \pm 16.3	NS
ASA physical status				
One	16	2	18	NS
Two	65	14	79	NS
Three	38	13	51	NS
Four	1	1	2	NS
History PONV				
Yes	21	4	25	NS
No	99	16	125	NS
Total number of comorbidities (mean number \pm SD)	3.23 \pm 2.58	4.47 \pm 2.52		.019
Procedure type				
Gynecologic	29	9	38	NS
Urology	21	2	23	
Eye	10	2	12	
Orthopedic	24	5	29	
Magnetic resonance imaging (MRI)	11	4	15	
Neuro	2	0	2	
Vascular	18	6	24	
Other	5	2	7	
Anesthesia type				
IVA/MAC	86	23	109	NS
Local	1	1	2	
Peripheral nerve block (PNB)	3	0	3	
IVA/MAC + PNB	25	6	31	
IVA/MAC + local	5	0	5	

NS, not significant; ASA, american society of anesthesiologists; PONV, postoperative nausea and vomiting; IVA/MAC, intravenous anesthesia/monitored anesthesia care.

process improvement included reduced PACU admission, PACU hold incidence and duration, LOS, and patient, hospital, and third party payer costs.

The 6-week data collection period for this project, including a 3-week reference and a 3-week implementation period, demonstrated that implementation of fast-tracking at our facility long-term could potentially result in an 80% PACU-bypass rate. This rate is similar to those rates found in the literature and resulted in a decreased LOS and no increase in morbidity for the AS patients at our facility.

During the reference period, 18 incidences of PACU hold occurred. In five of those cases, the patients that were on PACU hold were eligible to be fast-tracked, but were put on hold because of the policy in place mandating all patients go to PACU before transfer to the ACU for discharge. This resulted in 73 minutes of PACU hold time for these

five patients or \$4,526 of OR time (\$62/min) and \$295.65 of anesthesia time (\$4.05/min) based on national averages.^{15,16} Of the other 13 instances of PACU hold during the reference period, 9 of those cases had a fast-track eligible patient occupying a PACU bed causing PACU hold to occur. Therefore, during the reference period 14 of the 18 PACU hold incidences could have been avoided if fast-tracking were implemented. Overall the 18 incidences of PACU hold during the reference period resulted in a total of 350 minutes of PACU hold time, 249 minutes of which were directly caused by not fast-tracking patients that were eligible.

During the implementation period the fast-tracking process resulted in a decrease in PACU admissions, which likely contributed to the 83% decrease in PACU hold. None of the incidences of PACU hold during the implementation period

could have been avoided even with fast-tracking in place. This demonstrates that the problem cannot be completely avoided on busy OR days; yet, the results suggested that the implementation of fast-tracking significantly decreased the number and duration of PACU holds.

When comparing the LOS (time to meet discharge criteria) between the reference period and the implementation period, the LOS was significantly lower during the implementation period. However, the total ACU time during the reference period was significantly lower than during the implementation period. While this was an unexpected result, this suggests that patients who meet fast-track criteria require a longer recovery time in the ACU. However, it should be noted that they do not demand the intensive care provided in the PACU.

Determination of potential cost savings was based on published national averages. Average PACU stay charges are based on a 1996 study conducted by Loughlin et al and then adjusted using the US Department of Labor inflation calculator.^{17,18} The adjusted mean PACU cost is estimated to be \$606.99 per patient, an estimate based on a cost-to-charge ratio which may not be as accurate as those determined through a cost accounting system.¹⁷

The introduction of fast-tracking substantially decreased patient charges. During the 3-week reference period, 61 patients met fast-track criteria for bypassing PACU. Existing policy required those 61 patients go to the PACU for a total stay of 2,040 minutes. These admissions also contributed to 249 minutes of PACU hold time. The implementation of fast-tracking during this 3-week period, would have avoided patient charges including \$37,026.39 ($61 \times \606.99) in PACU charges, \$15,438 in OR hold time charges ($249 \times \$62.00$), and \$1,008.45 charges ($249 \times \$4.05$) in anesthesia hold time for a total savings of \$53,472.84. The potential savings per week during the reference period averaged \$17,824.28 for a projected annual savings of \$926,862.56. During the 3-week fast-tracking implementation period, 59 PACU admissions were avoided which saved patients \$35,812.41 ($59 \times \606.99) in PACU charges. Because no fast-track eligible patients were exposed to PACU hold, there were no unnecessary anesthesia or OR expenses incurred.

There were no data, either local or national, regarding the potential savings to the hospital if fast-tracking were implemented. In an attempt to determine potential cost savings to the institution, we considered unnecessary PACU nursing care because of the admissions of the fast-track eligible patients. In the reference period, 61 fast-track eligible patients were admitted for a total of 2,040 minutes or 34 hours. Based on the national average PACU RN salary of \$32.11 per hour,¹⁹ the 34 hours of avoidable PACU time during the reference period costs the facility \$1,091.74 in nursing salaries for the 3-week period. This translates to a potential annual savings of \$18,923.49 and demonstrates an area in which financial resources could be better utilized.

Although the numbers used for the cost analysis are based on national averages, they demonstrate the potential cost savings that fast-tracking can provide to both the hospital and patient. The financial benefits of this process improvement project may also be accompanied by increased patient satisfaction. Although this was not an a priori outcome measure, it has been reported that surgical patients with decreased LOS are more satisfied with their care.²⁰ Based on the Centers for Medicare & Medicaid Service Hospital Value-based Purchasing Program,²¹ hospitals must meet certain quality measures and performance standards, one of which is patient satisfaction, before they receive a certain percentage of their reimbursement for the fiscal year.

Inter-rater reliability was assessed during the implementation period as opposed to the reference period because patients who were fast-tracked would be scored at essentially the same time by both anesthesia providers and ACU nurses. Although, we determined there was a high percent of inter-rater reliability, the WFTS tool leaves room for subjectivity in the level of consciousness, respiratory stability, and postoperative pain assessment categories. Therefore, at the beginning of this project, numbered scoring was added to the pain assessment category based on the numeric rating score for pain intensity our institution uses as the standard of care, to make the scoring more objective (Table 1).

There were no patient characteristics that were significant for determining whether a patient met or did not meet fast-track criteria in the

population assessed. The clinical significance of this finding is that the WFTS instrument accurately identified patients who were safely fast-tracked in our adult patient population, and no single characteristic can be used to exclude patients from being assessed for their eligibility to bypass the PACU. Although patients who were not eligible for fast-tracking had a significantly higher total number of comorbidities compared with fast-track eligible patients the clinical impact may not be particularly relevant because the difference was one comorbidity.

Limitations

Provider customary practice and the natural tendency to resist change could have had an impact on the outcomes of this project. Routing patients through the PACU is a common practice and has been the standard of care for years at our institution. Patients may have been inappropriately scored to prevent them from bypassing the PACU when they were actually eligible to go directly to ACU. Additionally, some anesthesia providers made a decision to admit a patient to the PACU based on characteristics such as age or comorbidity even when they met bypass criteria causing the bypass rate to be lower than what it may have been. There have been no validity or reliability studies of the WFTS assessment tool; however, the tool has been used since 1997 in multiple settings and with numerous reports of its use in the literature. In addition, we determined the inter-rater reliability in our work and therefore do not consider the general lack of psychometric evaluation to be of significance.

Sustainability

The potential for sustainability of this process improvement at our institution is very high considering the benefits it can bring to patients and the organization. The use of the WFTS allowed appropriately selected patients to safely bypass the PACU, shorten the postsurgical recovery pathway and achieve earlier discharge times, therefore capitalizing on the efficiency of a free-standing AS center.

This process could improve institutional inefficiencies that contribute to increased LOS and cost of providing AS care in a hospital setting.²²

The current literature and the results of this project provide support for fast-tracking in multiple settings to decrease postoperative LOS and yield cost savings for the patient, facility, and third party payers without risking patient safety.

Areas for Further Research

Areas in the fast-tracking process that could benefit from further investigation include assessing patients that undergo general anesthesia for their fast-track potential as well as applying this process to patients with a planned postoperative admission to the hospital that are put on PACU hold because of unavailable space in the PACU. Evaluation of patients undergoing general anesthesia may identify characteristics or a subset of this population that are at low risk for adverse events that could be fast-tracked expediting their outpatient discharge. Expanding the fast-tracking process to patients being admitted to the hospital could help the facility work more efficiently when PACU space is limited. When patients are held in the OR for an extended length of time because of limited PACU space, they may be sufficiently recovered from the anesthesia that they do not need care in the PACU before direct transfer to the inpatient hospital bed. Examination of these two potential fast-tracking opportunities could further decrease patient related health care costs and increase efficiency in the surgical recovery process.

Conclusion

This work demonstrated that fast-tracking can reduce PACU admission rate, PACU hold incidence and duration, and overall LOS, and this practice has the potential to reduce patient, hospital and third party payer costs. Results of this process improvement project suggest that fast-tracking is a suitable intervention to increase work flow efficiency and decrease unnecessary patient, hospital, and third party payer costs. Overwhelming agreement between anesthesia providers and ACU nurses using the WFTS tool, suggests it is a useful tool to identify patients eligible to safely bypass the PACU. The future of health care reimbursement is dependent on eliminating unnecessary waste of time and money. Fast-tracking is one approach to help reduce this waste.

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