Fewer surgical cancellations occur after preoperative screening

Duke University Hospital has had a Pre-Operative Screening Unit (POSU) in place for the past 16 years to optimize patients prior to surgery, but until recently, there were no hard data on surgical cancellation rates. Now, a retrospective analysis has revealed that fewer cancellations occur when patients are seen in the POSU. During the study period (June 1, 2011 to May 31, 2012), Duke had 37 ORs on the main campus and 9 at its free-standing ambulatory surgery center (ASC). The study looked at the surgical schedules 24 hours prior to surgery up until surgical start time. Any cancellation within this time period was counted in the study.

A total of 35,050 procedures were performed, and 26,843 patients were evaluated in person or by phone screen. Patients not seen in the POSU were inpatients, sent either from the emergency room or by the surgical office/clinic, bypassing the POSU at the surgeon’s request. In all cases, an anesthesia provider performed a bedside workup on the day of surgery.

Surgical cancellation rates were 5% at Duke’s main campus and 2.9% at the ASC. The overall cancellation rate was 4.5%.

When patients were seen in the POSU within 2-30 days of surgery, the cancellation rate dropped to 1.1%. The most common reasons for day-of-surgery cancellation were “unknown” (28.9%) and “new medical condition” (28.4%)—ie, the patient was sick, had a fever, or had some change in condition since being seen in the POSU. Additional reasons for cancellations were “patient-initiated cancellation” (10.8%) and “scheduling problem” (7%).

Preliminary data from a follow-up study, which more precisely identifies cancellations on the actual day of surgery, shows an overall day-of-surgery cancellation rate for the main ORs of 1.5%. If patients are seen in the POSU, the cancellation rate drops to 0.6%.

The low cancellation rates are attributed to the rigorous assessment and thorough preoperative education each patient receives in the POSU. RNs give patients preoperative instructions, and patients are then evaluated by nurse practitioners, physician assistants, or anesthesia fellows and medical directors prior to surgery.

The POSU process

Each preop visit takes about an hour and a half. The POSU workup, completed by an anesthesia clinician, includes an admission history and physical (H&P); a thorough review of body systems; a list of prior operations, including any adverse reactions to anesthesia; and current medications and allergies to food, medications, and latex.

Practitioners review the anesthesia consent and ask the patient to sign it after all questions related to anesthesia are answered. The patient is thus prepared to receive anesthesia on the day of surgery.

The POSU visit may reveal undiagnosed systemic disease (eg, hypertension, diabetes, cardiac, pulmonary, and renal disease), which must be evaluated prior to surgery. The POSU staff, with support from the attending physician, order and arrange laboratory, cardiac, and pulmonary testing; perform basic medical management; and set up cardiac, pulmonary, and hematology consults as indicated for safe and successful surgery.
This workup is comprehensive enough to be used by surgeons as their admission H&P. It is also an example of one of the few times in an often fragmented health care system when a comprehensive synopsis of a patient’s medical status is documented and acted on.

The workup, additional consults, medical records, and signed anesthesia consent are placed in a chart with any additional paperwork from the surgical clinic. In addition, the most recent lab results, nurse’s teaching sheet, advanced directives, and research consent are placed in the chart. The chart is sent to the appropriate surgical area the day before surgery.

**Increased demand**
The success of the POSU has inspired additional services to request preoperative workups, and patients undergoing procedures such as colonoscopies, endoscopies, cardiac ablations, pacemaker insertions, and battery changes are now seen in the POSU.

Patients scheduled for MRIs and CT scans, which require sedation, are also screened in the POSU.

Demand for POSU services has outpaced unit space, and to meet the increased demand, offices and supply/cleaning closets have been converted to exam rooms and practitioner work spaces. Patient appointment schedules are adjusted on a daily basis to compensate for patient volume.

As Duke’s outpatient clinics have expanded and moved away from the main campus, the POSU has formed small satellite units manned by 1 or 2 anesthesia practitioners to alleviate some of the congestion in the POSU. About 8 to 12 patients a day may be seen in these satellite units.

The POSU includes a pediatric-specific unit, the Duke Children’s Health Center, which is staffed by 2 practitioners and a nurse who see 8 to 18 patients per day. The center is situated alongside the Child Life Services, which helps children and parents prepare for the procedures.

**Phone screening**
In addition to the POSU patients screened onsite, hundreds of patients are screened by phone each month. These patients are relatively healthy; they may have a stable chronic disease, such as hypertension, or require procedures such as a tonsillectomy or anterior cruciate ligament surgery.

Phone screening was created in 2005 to improve patient flow and reduce wait times. During the preoperative surgical clinic appointment, patients deemed eligible for phone screening fill out a detailed preanesthesia history form, which is sent to the POSU with a request for a phone screen.

A few days prior to surgery (and sometimes the day of surgery), RNs conduct the phone screening. They review the patient’s medical history and provide preop teaching and medication instructions (via a set of standing orders) to 700 to 800 patients a month. These nurses collect data using the same electronic anesthesia template as the one used by the POSU practitioners. On the day of surgery, the anesthesia team performs a physical assessment, and the anesthesia consent is reviewed and signed. These workups serve as an admission H&P for the surgeon.

A small study done in the POSU in 2010 demonstrated equal rates of patient satisfaction, regardless of whether screening took place in the POSU or by phone. A total of 209 patients (104 seen by POSU clinicians and 105 patients screened by phone) were asked whether the phone screen nurse or POSU clinician addressed
questions and concerns, whether the preoperative assessment process had prepared them for surgery, and whether phone screening was an overall positive experience. The study found no statistical difference in the groups.

What’s ahead
The POSU has 15 full-time nurse practitioners/physician assistants and hopes to hire more to accommodate the increase in volume. There are 12 full-time RNs, 5 full-time processors, and 6 lab/phlebotomists and intake personnel.

On average, the POSU evaluates 55 to 70 patients a day, most of whom have multiple comorbidities, and RNs may screen 30 to 40 patients a day, so as many as 110 patients may be evaluated daily. The POSU also has an admission/insurance check office and serves as a research hub. Researchers from anesthesia, cardiology, tissue banking, and surgery may visit patients and consult with them for research studies.

The diligent and thoughtful patient workups provided in the POSU have minimized surgical cancellation rates and improved use of OR times, thus allowing Duke to be more fiscally responsible. Duke hopes to learn specific reasons for cancellations in the future through discussions with surgeons.

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