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# The value of the visit: Quantifying the value added from a preoperative assessment

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ABSTRACT

*Background:* Previous literature from the study site identified the impact of the preoperative visit in meeting established guidelines and managing clinical issues and preventing cancellations. The authors sought to quantify the value added from the preoperative visit to the patient surgical experience.
*Method:* Over a three-month period, using an electronic database, nurse practitioners recorded new pertinent information that was not previously identified in the medical record. They noted omissions, made corrections, and recorded narrative data that could impact the planned surgery. These data points were distributed over multiple clinical and nonclinical categories. Appropriate descriptive statistical analysis was performed.
*Results:* Over 1100 patients were entered into the database, with 2318 findings recorded, which include rich narrative stories. Approximately 20% of the patients seen daily had a new finding. The entries were greater in quantity and scope than the authors had anticipated.
*Conclusion:* The study demonstrated that a multidisciplinary visit identified gaps in the preoperative process and added value to patient centered outcomes. Addressing the identified concerns could lead to improvements in clinical practice and add to the safety, quality, and operational efficiency of patient care over current systems.



## 1. Introduction

No study has been found to date that prospectively quantified new assessment data at the time of a preoperative visit. The literature review did reveal other retrospective studies that demonstrated gaps in the preoperative process or evidence that the preoperative assessment had a positive impact on patient safety, quality, and/or efficiency.[1–4] The study's theoretical base stems from the Institute of Medicine's (IOM) Six Competencies for Quality Patient Care, which are patient centeredness, interpersonal and communication skills, professionalism, systems-based practice, practice-based learning, and knowledge.[5]

In a recent multidisciplinary study of over 1000 patients in the study setting, patients were interviewed prior to their clinic visit.[6] Thirteen percent (13%) of patients reported at least one critical deficit in knowledge, such as not knowing the name of their procedure or diagnosis or the risks and benefits of their surgery. Over one-third (36%) of the patients reported wanting additional information or more discussion and nearly two-thirds (65.5%) had not completed or discussed a health care proxy (HCP) or advance care planning. The authors of the current study believed that some of the issues were mitigated by the subsequent preoperative evaluation, in which a full history and physical are performed and patient teaching and advocacy occurs. The hypothesis of the study is that a preoperative evaluation with a nurse practitioner will uncover new previously unrecorded findings that could impact the safety of patients' surgical experiences.

### 1.1. Setting

The study setting is a multidisciplinary preoperative clinic in a large, urban, tertiary care center. The work flow of the clinic begins in the surgeon's office. Once a surgeon develops a surgical plan with their patient, an administrator will schedule a seventy-five minute appointment with the preoperative center within thirty days of the surgery. The patient receives a letter and/or a pre-recorded phone message to bring their medication list, expectations for the visit, and the scheduled testing to be done. The

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patient will meet with a nurse practitioner, or an anesthesia resident and a nurse, for a complete history and physical, medication reconciliation, individualized perioperative education, and necessary testing such as an electrocardiogram, and/or laboratory testing. The provider discusses their evaluation with one of two attending anesthesiologists. The anesthesiologist writes a summary in the electronic record, and if needed, begins a collaborative process of addressing any issues that arise, such as the need for an anticoagulation plan, requests for outside records, or arranging for additional evaluations, including cardiac, respiratory, vascular or dental examinations. Ongoing problem solving continues until resolution.

The clinic uses the principles of risk estimation, determines appropriate testing and interpretation, and, in collaboration with consultants from other specialties, ensures that patients are medically and emotionally prepared for surgery. As one of the gateways to the hospital, the preoperative clinic assesses approximately 85–90% of the hospital's 44,000 surgical caseloads for the operating room and for the patients scheduled for procedures in the hospital who require anesthesia support. In addition to anesthesia assessments, preoperative history and physical exams, nursing assessments, phlebotomies, electrocardiograms, and some postoperative care coordination on site, the clinic addresses many of the Joint Commission Standards. These include smoking cessation education, development of a health care proxy, and patient education.

The patient's clinic visit is a multidisciplinary assessment, "coordinating surgical, medical, anesthesia and nursing elements".[7] The outcome of the assessment, testing, and analysis is a coordinated plan of care for each patient, with recommendations based on national guidelines, hospital and unit policies, and protocols. The goals of patient safety, efficiency, and risk assessment are primary concerns. Communication of findings and recommendations are disseminated to treating surgeons, the anesthesia team, and the perioperative nursing team caring for the patient. In addition, the patient education and advocacy that occur in the patient-centered visit serve to support the hospital's missions and meet benchmarks for standards of care.

In addition to medical records, the crux of the visit relies on information inputs from the patient, including their recollections of their health history, medications, allergies, diagnostic tests, their family history, and health habits. The clinic regularly updates evidence based protocols and collaborates with other researchers for a variety of concerns. Three recent projects in the clinic relate to patients who have diabetes, older patients who may have undiagnosed cognitive deficits, and the management of critical laboratory values. Data relating to these initiatives are captured in part in the research database.

## 2. Materials and methods

### 2.1. Theory/calculation

Operating room (OR) booking, medications, allergies, laboratory testing, cardiac and respiratory status, and individual concerns were reported over sixty-seven (67) clinical days of data collection.

After culling through previous records and discussing with a multidisciplinary group, categories were identified to capture common themes of issues presenting at the preoperative assessment. An informatics specialist created an electronic database to record the new findings. The study was introduced to the staff, and paper examples of the data collection tool and reminders to record findings were displayed throughout the clinic (Appendix A). An email with an electronic link to the database was sent daily. New pertinent information, assessed for the first time at the preoperative visit, was entered into an electronic database under six main category headings with multiple subcategories, as depicted in Fig. 1. Regular updates were provided at staff meetings and via email. After a week of data collection, two additional categories, body mass index (BMI) and the presence of a preoperative bowel preparation, were added, and the section for narrative findings was expanded. Data collection occurred over a three-month

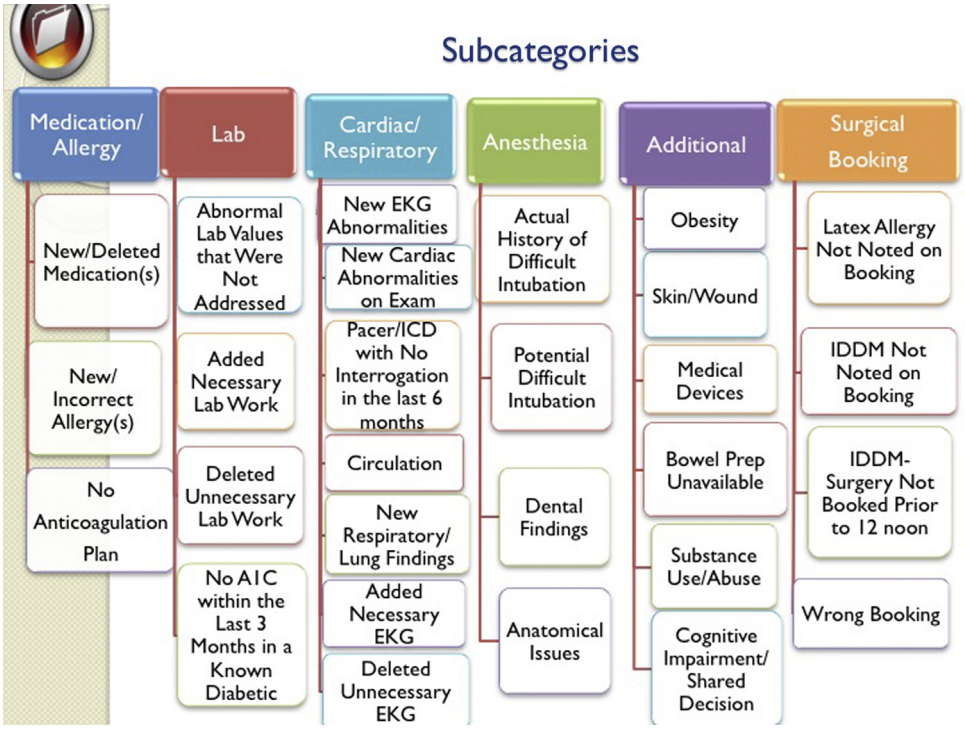


**Fig. 1.** Outline of six key categories and corresponding subcategories.