Preoperative Clinics

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KEYWORDS

• Preoperative assessment • Preoperative evaluation • Preoperative clinic
• Perioperative • Anesthesia • Surgery

KEY POINTS

- The primary goal of a preoperative program is to provide safe, reliable preoperative medical optimization in a comprehensive manner to preprocedural patients.
- Preoperative care is best delivered in a centralized but highly matrixed multidisciplinary environment.
- Communication and collaboration across service lines are essential to programmatic success.
- Although there is no single universally accepted model, a preoperative program with evidence-based protocols supported by institutional consensus ensures that goals and objectives will be met.

INTRODUCTION

Each year, more than 200 million people undergo surgery worldwide, and this population is becoming increasingly medically complex.[1] In the United States, 26% of all inpatient adverse events within the Medicare population are attributable to surgery and procedures.[2] The number of procedures performed in ambulatory surgery centers now exceeds those done on an inpatient basis.[3,4] In this progressively challenging environment, with an estimate that 44% of adverse perioperative events are preventable, it is essential that the risk of perioperative complications be mitigated. Also, the financial solvency of operating rooms in a fragmented health care system may be jeopardized by incomplete patient information that leads to delayed and cancelled surgeries.[5] The preoperative clinic is an ideal setting to optimize patients' medical

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conditions, ensure patient safety, and maximize economic efficiency within the preprocedural arena.

HISTORY/BACKGROUND

Through the years, the process of preoperative evaluation has evolved significantly. What began as a presurgical hospital admission with initial evaluation the day before surgery has transformed into a multidisciplinary, team-based approach of medical optimization and care coordination occurring weeks before the procedure. Standardizing the process has helped ensure that regulatory, accreditation, and reimbursement requirements were met. Careful triage through prescreening helped identify which patients should be referred for telephone screens, clinic visits, or to specific providers for further evaluation.[6,7] Such tools have also been used to discern whether additional testing or patient education might be necessary. Historically, the organizational structure of preoperative clinics has varied by institution. Several examples of unique clinic designs, optimal physical locations, and ideal staffing models have been well described.[8] Details regarding appointment scheduling and the proportion of patients triaged to alternate visits often depended on the systems put into place and the institutional practice.[9]

In his seminal article in 1949, Dr Alfred Lee[10] recognized that "the anesthetist is frequently confronted with patients who are not in the best possible state for the operation." Lee[10] recognized the need for medical optimization and acknowledged it was "inadequate for the anesthetist to see the patient the evening before the operation, or even two to three days beforehand." Lee[10] also noted that preoperative clinics were not best suited for "perfectly fit patients…nor those undergoing trivial surgical procedures." Since his initial observation and the inception of rudimentary preoperative clinics, additional approaches have been developed using clinical data to risk stratify patients and triage accordingly.[11] The first example, provided by Chase in 1977,[11] used a software-based, computer-assisted screening program to triage patients according to risk of postoperative respiratory complications. This single-organ-system approach proved inadequate, neglecting global medical optimization, patient education, and appropriate testing.

A subsequent study of patients undergoing 4 distinct surgical procedures at 3 separate institutions analyzed preoperative testing patterns[12] and found an increase in unnecessary laboratory testing when patients were not first examined in a preoperative clinic. According to Macario and colleagues,[13] 26% of the laboratory tests were unwarranted based on physical examination findings noted by the clinician at the time of the appointment. Further studies supported more cost-effective diagnostic testing within a formal preoperative clinic setting in which all testing decisions were made following physical assessment of the patient.[14–18] These initial observations set the stage for the progressive development of preoperative clinics with standardized systems identifying high-risk patients to reduce inappropriate testing.[13–15]

In the 1990s, Fischer[19] expanded on these ideas by creating a comprehensive preoperative evaluation process. He used concepts previously proposed with goals of increasing operating room efficiency, streamlining testing, coordinating subspecialty consultations, and retrieving medical records. Fischer's[19] preoperative clinic was highly successful in reducing unnecessary testing by 55%, reducing subspecialty consultations, and decreasing day-of-surgery cancellations by 88%, which resulted in estimated cost savings of $112/patient.[19] By focusing on elements directly related to optimizing patient health, Fischer[19] created one of the first highly effective preoperative clinics.[19]