Initial Results from the National Anesthesia Clinical Outcomes Registry and Overview of Office-Based Anesthesia

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KEYWORDS

• Office-base anesthesia • Ambulatory anesthesia • Patient safety • Patient outcomes
• Anesthesia Quality Institute • National Anesthesia Clinical Outcomes Registry

KEY POINTS

- Safe office-based anesthesia practices dictate proper patient and procedure selection, appropriate provider qualifications, adequately equipped facilities, and effective administrative infrastructure.
- Our analysis of the data from the Anesthesia Quality Institute National Anesthesia Clinical Outcomes Registry included patient demographics, adverse outcomes, procedure and anesthesia type and duration, and case coverage by type of anesthesia provider.
- There is increasing emphasis on continuous quality improvement, electronic health records, use of checklists, and outcomes data reporting.

INTRODUCTION

The past 3 decades have seen an impressive shift of surgical care from the hospital to the outpatient setting.[1] Initially, ambulatory surgical centers (ASC) were heavily used for elective day surgery, but further migration to physician offices is now common. The ability to perform surgery in an office strongly correlates with improvement in delivering safe and effective office-based anesthesia (OBA).[2] The remarkable numbers help illustrate this growing movement. The American Society of Anesthesiologists

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Anesthesiology Clin 32 (2014) 431–444
http://dx.doi.org/10.1016/j.anclin.2014.02.018 **anesthesiology.theclinics.com**
1932-2275/14/$ – see front matter

(ASA) originally estimated that more than 10 million office procedures were performed in 2005, which doubles the approximations from just 10 years prior.[3] Current assessments show 17% to 24% of all elective ambulatory surgeries take place in an office.[4] It is apparent that this trend will continue; thus, the ability to deliver OBA must be in the repertoire of current and future anesthesiologists.

The impetus for the shift to OBA is a combination of technological improvements, financial incentives, and patient/provider preference. Improvements in technology allow for compact and portable monitors that require minimal support infrastructure, which is crucial for the office because of space and storage concerns. Additionally, this portability has made way for a previously unknown entity, the mobile anesthesia provider who brings all necessary equipment and medications to safely anesthetize patients.

Financially, the office provides opportunity for potential savings, which is well documented in the literature. For example, a recent study observed the cost of dental rehabilitation in pediatric patients is almost 13 times less in an office versus a hospital, equating to a savings of $6800 per patient.[5] This savings is caused by a minimal or nonexistent facility fee and a significantly shorter aggregate time per patient (from preoperative to recovery), emphasizing office efficiency. The potential savings for individuals, insurers, and the health care system as a whole is tremendous; payers are incentivizing doctors to perform procedures in the office. The margin of profit for the providers is the same or greater when operating in the office, which also encourages growth.[6]

Many providers and patients prefer the office over other settings.[7] Providers have greater control over scheduling, more consistent/efficient support staff, and the ability to create the optimal workflow. For patients, the appeal of office procedures includes greater privacy; perception of increased personal attention; lower risk of nosocomial infection; and less aggravation by avoiding large, confusing hospitals.[2]

ADMINISTRATIVE AND SAFETY ISSUES

Literature Review

A literature review of safety in the office setting shows there are no randomized controlled trials comparing office-based surgery with other surgical locations. Thus, most of our understanding regarding safety in the office is derived from retrospective data (**Table 1**).

The hallmark office safety study was conducted by Vila and colleagues[8] and examined 2-year data for adverse events reported to the Florida Board of Medicine. The study stated that the office setting carried a 10-fold increase in relative risk compared with ambulatory surgical centers. There was immediate criticism caused by an inherent limitation in study design because the numerator for calculating the adverse events was derived from all offices, whereas the denominator used for total number of procedures was from only accredited offices.

Several researchers were unable to corroborate Vila and colleague's findings, and a more recent study by Coldiron and colleagues[9] examined self-reported data to the Florida State Medical Board from 2000 to 2007. During this period, there were a total of 31 deaths and 143 major complications, including emergency transfer to the hospital. Most patients who experienced an adverse event were ASA class 1 patients undergoing elective cosmetic procedures. One weakness of this study is that the data represents only voluntarily reported information from a limited number of offices, which limits the conclusions that may be drawn.

Keyes and colleagues[10] analyzed data using the American Association for Accreditation of Ambulatory Surgery Facilities' (AAAASF) mandatory Internet-based