

## Office-Based Anesthesia: Safety, Patients, Procedures

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How safe is office-based anesthesia [OBA]? There is little information. In data reported by AAAASF (aesthetic surgeons) over 5 yrs, there were 126 precautionary hospitalizations (1: 3,180), 3 deaths attributed to anesthesia (1: 133,558) and 2 fatalities during or within 4 hrs of surgery, both MIs. The overall incidence of deaths within 48 hrs of surgery was 1: 80,000. (Koch ME et al. *Anesth Clin N Amer* 17:2 June 1999) This may be compared to the widely quoted figure for anesthesia mortality of ~1: 300,000.

The potential safety problems are well known. "There are special problems that [anesthesiologists] must recognize when administering anesthesia in the office setting. ... Office operatories currently have little or no regulation, oversight or control by federal, state or local laws. Therefore, [anesthesiologists] must satisfactorily investigate areas taken for granted in the hospital or ambulatory surgical facility such as governance, organization, construction and equipment, as well as policies and procedures, including fire, safety, drugs, emergencies, staffing, training and unanticipated patient transfers. {ASA "Guidelines for Office-Based Anesthesia", <http://www.ASAhq.org/publicationsAndServices/standards/12.pdf>}

To promote safety in office-based surgery, careful attention to selection of patients, anesthesia and procedures is needed. The key to **patient selection** is sound communication between the surgeon and the anesthesiologist, beginning with important non-patient factors: the planned procedure, the facility and the comfort level of the medical staff. Each office practice needs to establish criteria to determine patient selection, although there are generally applicable criteria. These criteria should take into account:

1. Patient's medical status.
2. Degree of stability of that medical status.
3. Patient's psychological status.
4. Patient's support system at home (social evaluation)

(Twersky RS et al., ASA "Office Based Anesthesia: Considerations for Anesthesiologists in Setting Up and Maintaining a Safe Office Anesthesia Environment",

<http://www.ASAhq.org/publicationsAndServices/office.pdf>) Patient selection also includes consideration of the medical condition of the patient and specific morbidities that could complicate the conduct of *anesthetic* and *operative* management, as well as intrinsic risk or invasiveness of the procedure. Most OBS patients are ASA 1 and 2, and these patients can be assessed and scheduled by protocol. Patients with higher severity of disease (ASA 3 and 4) should have their disease states medically optimized, and then have a personal consultation with the anesthesiologist.

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Assessment of a patient's medical condition should be based on the history, physical examination, and laboratory studies as determined by the surgeon, primary care physician and/or anesthesiologist. The H&P should be done by the surgeon or designee, it should be current (within 30 days or as defined by state regulation), and should be reassessed as unchanged on day of procedure. The choice of lab tests, CXR and EKG should be guided by the individual patient's underlying medical condition and the likelihood that results will affect the anesthetic plan. "Screening" lab tests are not recommended. A partial list of specific patient selection factors includes:

- Abnormalities of major organ systems, and stability and optimization of any medical illness.
- Difficult airway
- Previous adverse experiences with anesthesia or surgery
- Current medications and drug allergies
- Time and nature of the last oral intake
- History of alcohol or substance use or abuse
- Presence of an adult who assumes responsibility to care for and accompany pt from the office.

A separate anesthesia consent is recommended, by patient or guardian.

Selection of **anesthetic approaches** for the office surgery range from local infiltration and sedation to regional and to general anesthesia, using IV and inhalation techniques. However, more important than the choice of specific agents or techniques, the anesthesiologist must focus on providing an anesthetic that will give the patient a rapid recovery to normal function, with minimal postop pain, nausea or other side effects.

Complications can occur with all anesthetics. It is imperative for the office practitioner to be prepared with all needed equipment as well as the drugs and skills for rescue and resuscitation, including oxygen, positive pressure ventilation, airway aids, and resuscitation medications. The practitioner must continuously anticipate potential adverse events. Continuous clinical observation and vigilance are the basis of safe anesthesia care. The use of standard basic anesthesia monitoring is imperative. The anesthetist also needs to consider positioning and patient protection, individualized according to patient needs and type of surgery, which may include warming, eye protection and anti-embolic stockings. An anesthetic record must be maintained, with anesthetic agents, medications, fluids given/losses and monitored physiologic parameters (q5 min).

Koch et al. proposed the following clinically essential portable anesthesia supplies for OBA, using the acronym "POSEMD":

- P - Positive pressure ventilation
- O - Oxygen
- S - Suction
- E - Emergency equipment
- M - Monitors
- D - Drug and pharmaceuticals

These supplies can be packed in a toolbox, knapsack, or briefcase. ( Koch ME, Giannuzzi R, Goldstein RC: Office anesthesiology. North American Clinics 17(2): 395-405, 1999)

Recovery care for OBA requires the answering of several questions. Who will do the recovery – depending on the setting it may be the anesthesiologist or a facility nurse. Recovery care is often provided in the OR, although there may be a separate recovery area. Discharge is often by predefined, consistent criteria, and always with a responsible escort. The office needs a predetermined plan on how to address emergencies, integrating with community resources, ‘911’, and local ambulance services. If transfer to a hospital is needed, who will be responsible for the transfer and the subsequent hospitalization.

**Procedure selection** is the other key component of OBA safety. The decision to do a procedure depends on facility limitations, including equipment, staff, and environmental factors. Procedure contraindications include:

- Reasonable likelihood of substantial blood loss
- Intractable pain or immobility severe enough to interfere with the routine activities of daily living
- Long duration precluding sufficient recovery time
- Lack of necessary surgical or anesthesia equipment

Other key factors determining the choice whether to do a procedure are the skill and experience of surgeon and the skill and experience of anesthesiologist.

State and Professional Organizations may define appropriate procedures for OBA by regulations & guidelines. OBA regulations/guidelines are often defined by level of anesthesia needed, with increasing evaluation, equipment, and personnel.

The American College of Surgeons has promulgated the most-widely used classification system:

Class A Minor surgical procedures under topical and local infiltration with/without oral or IM preop sedation. (No blocks.)

Class B Minor/major procedures with oral, IV, or parenteral sedative/ analgesic/ dissociative drugs.

Class C Major procedures needing general or regional block anesthesia & support vital functions. (AAAASF restricts the use of propofol to Class C facilities.)

In addition, the ACS states that patient selection should consider the condition of the patient and potential risks. This judgment should be made by the physician (Class A) and/or anesthesiologist (Class B, C). ACS notes that Class A facilities usually provide care for ASA #1 and #2 patients, while Class B and C facilities require written, documented evidence of preoperative evaluation by a physician (surgeon and/or anesthesiologist) for ASA #3 and #4 patients.

With all of these factors, there is one central safety question for procedure selection in office-based practice. Independent of surgical complexity, the anesthesiologist should satisfy him/herself that the procedure to be undertaken is within the scope of practice of the healthcare practitioners (surgeon/nurse working in field of his/her training) and the capabilities of the facility. Then, the choice of patients and procedures for office-based surgery will maximize safety.