

General Anesthesia Policy and Protocol

Purpose: The main indication for general anesthesia administered to patients undergoing dental treatment is behavior management. This is especially true for the pediatric patient and the patient with special needs. These special patient populations typically present as extremely difficult or impossible to treat given their age and/or underlying mental, physical or medical conditions. The administration of general anesthesia allows for the effective management of the patient allowing for the provision of thorough and quality dental care.

Benefits: In addition to the successful behavior management of the patient allowing for the provision of dental care, there are other positive outcomes involved with the provision of general anesthesia.

1. Compliance- with the various factors involved with the delivery of care for the pediatric patient and the patient with special needs, compliance is an issue that can significantly effect the provision of care to the patient. With compliance there are the issues of the caregiver arranging for the delivery of care over multiple visits as well as the patient having to return for care over those multiple visits. The issue alone is often responsible for broken appointments due to a variety of reasons (i.e. car breaks down, family member sick, taking time off from work, etc.). With the patient, it can become both threatening and traumatic to return for care over a period of several appointments. This issue alone can also have a life long impact on the patient. With the provision of general anesthesia, this becomes a non-issue. Given the nature of such a procedure, all treatment is provided during one treatment visit. This benefit serves the family, care providers, patient as well as the clinic/office.
2. Financial- when a parent has to take time off from work they face the potential for loss of income. When a patient does not come in for an appointment there is a loss of income for the clinic/office- this is especially true with multiple instances of broken appointments as well as the appointment scheduled for a long time period. There is no question that there is tremendous financial gain when ALL treatment can be provided in a single treatment setting. This type of treatment provision is an incredibly effective use of resources, especially for the clinic/office. Again, this is a benefit for all involved with the procedure.
3. Failed appointment- there is no question that the attempt at treatment that results in termination is an issue that impacts the areas discussed above as well as emotionally impacting the patient, parents or caregivers as well as the care provider. This is a frustrating and upsetting situation for all involved and, in some instances, can result in the loss of a patient as they may seek care elsewhere. There is no reason to attempt care when it is predictable that the appointment will not be successful. The best and most efficient approach is to identify the patient that will not be able to receive dental treatment without appropriate behavior management and schedule that patient for general anesthesia.
4. Relationships- providing care in a compassionate manner is one of the best methods to establishing, maintaining and developing a strong clinical practice. If patients know they are going to receive such care they will become and remain loyal as well as tell others about the level of care they receive at the clinic/office. This issue alone has proven to be responsible for growing a strong patient base that will not go elsewhere for treatment.
5. Other- there are certainly other benefits that result from this approach to dental care as well as crossover of benefits as has been discussed previously. The important issue to understand is the

benefits are tremendous for all those involved with the oral health of these special patient populations.

Risks: The most obvious risk is the provision of anesthesia. Anesthesia alone is a risk for the patient. It is also perceived that anesthesia provided outside of a hospital, ambulatory surgery center or similar facility is not safe. This is just not true. The risks of anesthesia in the clinic/office-based setting will be discussed at a later point. There are also other potential risks when administering anesthesia in this setting.

1. Anesthesia- there is no question putting a patient under general anesthesia carries a risk to the patient. These risks are no different for any treatment setting the patient may be seen. This is especially true for the healthy patient. For the patient that presents with coexisting medical conditions, there is the requirement to determine the patient's ability to receive care in this setting. Again, this is no different than utilizing anesthesia criteria to determine any patient's ability to undergo an anesthetic.
2. Compliance- there are instances where a parent or care provider does not want the patient to undergo general anesthesia for dental care. This issue is typically identified BEFORE the patient arrives for an appointment and with further explanation and education most parents/care providers agree to this method of service provision.
3. Broken appointment- there are instances of broken appointments with patients scheduled for general anesthesia. The difference with a patient scheduled for general anesthesia versus a patient scheduled for care without anesthesia is that anesthesia patients are scheduled on a block schedule. This means that though a patient may no show for their appointment, there are other patients scheduled for the same procedure and those patients can be rearranged to make up for the open appointment. Additionally, because of the pretreatment contact with the family regarding the appointment and what is involved with both the dental clinic/office and the anesthesia provision, there is typically a very low rate of broken appointments.

Protocol: When administering general anesthesia to a patient in the clinic/office-based setting, the following protocol will be followed.

1. Pre-operative evaluation- the health history completed for the patient at the dental clinic/office is received. This health history is used to perform a thorough history review with the parent/caregiver covering issues specific to anesthesia as well as a general review of systems. This is typically done by phone. If it is determined that additional information is needed, those arrangements are made.
2. Consultations- as determined through the health history review, consultations are pursued with the PCP and/or specialist(s). These consultations are utilized to determine the patient's ability to tolerate an anesthetic provided in this setting. Consultations are also utilized to determine the need for any interventions and/or adjustments for the patient to better tolerate the planned procedure.
 - adjustments- these would include such measures as changing insulin dosages based on the time of the procedure and its planned length of time.
 - interventions- these would include such measures as antibiotic prophylaxis for an underlying heart condition or prescribed breathing treatments for the patient with asthma

3. Pre-procedural (day of treatment)- the anesthesia provider arrives at the clinic/office at time prior to the start of the first appointment in order to set-up and prepare the operatory for the provision of anesthesia. The anesthesia provider provides all necessary equipment and supplies for the provision of the planned anesthetic as well as adjunct supplies that may be required during the procedure. This also includes required equipment and supplies to be utilized in the event of an emergent situation.
4. Pre-procedural care- prior to the start of the procedure anesthesia consent is confirmed, NPO status is confirmed, and the weight of the patient is verified. If there were any adjustments and/or interventions recommended, they are verified as being accomplished.
5. Procedural care- only ONE patient will be treated under anesthesia at any given time. When it is time to begin treatment, the patient is brought to the operatory with his/her parent(s) and/or caregiver(s). Given the age as well as the level of cooperation as determined by the anesthesiologist and those presenting with the patient, it is decided whether the patient will be cooperative for the start of an intravenous line. Otherwise an intramuscular injection is administered to the patient to gain their cooperation. Once the effects of the injection are achieved, the patient is placed in the chair where the treatment will be delivered and prepared accordingly. This preparation includes the start of an intravenous line (if the IM was administered) for the continued administration of medications during the procedure as well as all required monitoring devices including non-invasive blood pressure, pulse oximetry, and electrocardiography. Once the patient is prepared for the procedure, the dentist is instructed to commence treatment. During the procedure, the patient is continuously monitored and the anesthesiologist is present at all times. Upon completion of the dental care, the recovery process is initiated. This includes the continued monitoring of the patient until such time that the anesthesiologist confirms the patient is stable and able to be removed from the monitors and the IV discontinued.
6. Recovery- when determined by the anesthesiologist, the patient is transferred to a designated recovery area. At this time, the parent(s) and/or caregiver(s) are reunited with the patient. The patient remains in the recovery area until the discharge criteria are met. Post-anesthesia instructions are provided in both verbal and written formats. After care contact is also provided to ensure the ability to speak with the anesthesiologist and/or the anesthesia staff if needed.
7. Follow-up- ALL patients receiving anesthesia are contacted after their appointment as part of an ongoing quality assurance/quality improvement measure.

Equipment and Supplies: The following equipment and supplies are supplied at the procedure when anesthesia is provided.

1. Monitors- NIBP, SaO₂, Pulse, EKG
2. Intravenous (IV) set-up- catheters (24, 22, 20, 18 gauge), tourniquet, alcohol wipes, gauze, tape, fluids (normal saline, lactated ringers), administration set, IV stand, band aides
3. Medication delivery- syringes (3cc, 5cc, 10cc, 20cc), administration sets (for infusions), needles (22, 20 gauge)
4. Miscellaneous- nasal pharyngeal airways (NPA), oral pharyngeal airways (OPA), nasal cannulas, throat packs, infusion pump

Medications: This following list includes the most common medications used for the administration of general anesthesia. This does not imply that other medications may or may not be used at the discretion of the anesthesiologist. Additionally, it is not standard protocol to use opioids as part of the anesthesia technique given the increased risk to respiratory function with their implementation.

1. Ketamine (IM and IV)
2. Midazolam (IM and IV)
3. Glycopyrrolate (IM and IV)
4. Diazepam (IV)
5. Propofol (IV)

Medical Emergencies: As part of the requirements for permitting to deliver general anesthesia or other levels of anesthesia/sedation to patients undergoing dental treatment, our practice is in full compliance with the regulations established by the Arizona State Board of Dental Examiners (BODEX). Compliance with these regulations involves initial examination and evaluation by BODEX followed by renewal every three years involving examination and evaluation. The examination and evaluation process involves the following;

1. Clinical- the anesthesia provider is observed providing anesthesia to a patient to ensure their clinical skill and ability during treatment. This includes evaluation of how the anesthesia provider responds to different aspects of the provision of care as well as problem-based scenarios that are discussed during the course of treatment.
2. Didactic- there is a discussion session that takes place that evaluates the anesthesia providers knowledge in the following areas;
 - local anesthesia overdose
 - allergic reaction
 - convulsion
 - epinephrine overdose/loading
 - bronchospasm
 - emesis/aspiration
 - laryngospasm
 - angina pectoris
 - myocardial infarction
 - hypotension
 - hypertension
 - cardiac arrest
3. Equipment and supplies- the anesthesia provider has their equipment and supplies examined to ensure compliance with required regulations. This includes verification of necessary equipment and medications involving their condition, appropriateness and dates of expiration. The following is a listing of the equipment and supplies examined and verified;
 - back-up lighting
 - back-up power sources
 - back-up oxygen
 - back-up suction (battery operated or manual)
 - adequacy of the operating area

- bag-valve-mask with appropriate connectors and face masks
- intubation set-up
 - - laryngoscope with appropriate sizes and types of blades
 - - Magill forceps
 - - tonsillar suction
 - - endotracheal tubes in appropriate sizes
 - - endotracheal suction catheters in appropriate sizes
 - - nasogastric suction catheters in appropriate sizes
- oral and nasal pharyngeal airways
- defibrillator
- adequate anesthesia record
- current (unexpired) medications
 - - all utilized anesthesia medications
 - - vasopressor
 - - corticosteroid
 - - bronchodilator
 - - muscle relaxant
 - - cardiopulmonary arrest antagonist
 - - narcotic antagonist
 - - benzodiazepine antagonist
 - - antihistaminic
 - - antiarrhythmic
 - - anticholinergic
 - - coronary vasodilator
 - - anticonvulsant

Office Providers and Staff: Our office provides clinic/office-based anesthesia for all patients regardless of age, mental, physical or medical conditions unless otherwise indicated. Our primary patient population consists of children under the age of 5 years old. We also will see older children with some frequency. Our second largest patient population is those patients with special needs of all ages. We also see adult patients with a variety of health issues including dental phobias. Our providers are dentists who have completed at least two years in a formal anesthesia training program. All of our staff participate in continuing education programs as well as have completed advanced training in anesthesia management. We have a highly trained office providing the highest level of anesthesia service and care for our patients and dental clinics/offices.

- Mission- To provide the highest level of care for any clinic/office who requests our services and provide the most effective and vigilant care for those patients who receive our services. To serve the needs of our community by providing treatment in a caring and compassionate manner for any patient in need.
- Mission Statement- To care for those who would otherwise not be treated