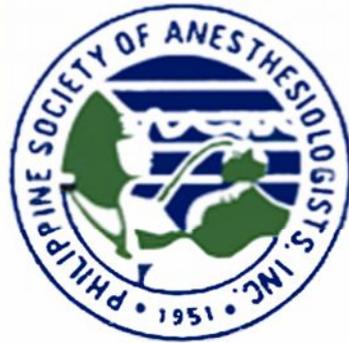


# PSA Guidelines for Safe Anesthesia Practice



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## **Guidelines for Safe Anesthesia Practice**

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## PREAMBLE

These **Guidelines for Safe Anesthesia Practice** are for anesthesiologists practicing in the Philippines. The purpose is to provide a protocol, assistance and/or guidance to all anesthesiologists, professional societies, private and government hospital administrators, in providing safe anesthesia and improving perioperative outcome.

The Philippine Society of Anesthesiologists, Inc. declares the following general principles of **Safe Anesthesia Practice**.

- The most important element of perianesthetic care is the continuous presence of a vigilant and well-informed anesthesiologist throughout the operative period.
- Monitors are only an extension of the basic perceptions of the vigilant anesthesiologist.
- Immediate life-saving measures always take precedence in an emergency.
- Basic Requirements are mandatory for the conduct of Safe Anesthesia.

## **GENERAL GUIDELINES**

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### **I Professional Status**

The anesthesiologist is a special who has received adequate training in a anesthesiology, resuscitation, intensive care, acute pain and chronic pain management.

### **II Professional Organizations**

Anesthesiologists should organize themselves at local, regional and national levels, for the setting of guidelines of practice, supervision of training and continuing education with appropriate certification and accreditation, and general promotion of anesthesia as an independent medical specialty.

### **III Training, Certification and Accreditation**

Training years is the optimum period required to learn the specialty. Importance is given to learning related basic sciences, medical disciplines and development of knowledge and skill in clinical anesthesiology. This will culminate in an acquisition of a certificate of Anesthesiology Residency. The title *Diplomate* is conferred one who has passed the written, practical and oral examinations given by the Philippine Board of Anesthesiology. Advanced postgraduate specialty and subspecialty training may be pursued.

### **IV Records and Statistics**

A record of the details and course of each administration of anesthesia should be made and kept with the patient's medical record. This includes details of the pre-operative assessment and the post-operative course. These data must be collated to facilitate progressive enhancement of the safety, efficiency, effectiveness and appropriateness of the anesthesia.

**V Peer Review**

Institutional, regional and/or national mechanisms to provide a continuing review of anesthetic practice should be instituted. Critical incident reporting is encouraged as useful mechanism in this respect. Legal safeguards of confidentiality of the review material is appropriate and should be applied. Procedures and guidelines should be developed to ensure that deficiencies in individual and collective practice are identified and rectified.

**VI Workload**

A sufficient number of trained anesthesiologists should be available so that each individual may practice to a high standard. Time should be allocated for professional development, administration, research and teaching.

**VII Personnel**

The anesthesiologists must be trained and experienced in the delivery of the anesthetic. An anesthesiologist must be dedicated to no more than one patient at a time. The anesthesiologists should be responsible for the care of the patient during transport and while in the PACU.

**VIII Facilities and Equipment**

Appropriate equipment and facilities should be present during anesthesia and recovery. As far as possible, anesthesia equipment should conform to relevant national and international standards. The anesthetic equipment must be regularly maintained and in good working condition prior to each anesthetic procedure. Presence of alarm systems to detect hypoxic gas mixtures, disconnections, leaks, overpressure is highly recommended.

## PERIANESTHETIC CARE AND MONITORING

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The most important component of perianesthesia care, including monitoring of the anesthesia delivery system and the patient, is the continuous presence of a vigilant anesthesiologist throughout the operative period.

The **Guidelines of Safe Anesthesia Practice** apply to any patient who undergoes Any form of anesthesia care.

The monitoring tasks of the anesthesiologists include:

Levels of monitoring are:

- Continual - repeated regularly and frequently
- Continuous - without interruption.
- Routine monitoring - applicable to all patients, regardless of disease state.
- Specialized monitoring - directed towards a particular pathological problem or for the use of a specialized technique.
- Extensive monitoring - applicable to critically-ill patients or those undergoing extensive surgical procedures.

### I. Pre-Anesthesia Care

- The patient must be evaluated by an anesthesiologists prior to induction of anesthesia.
- The anesthesiologist must ensure that necessary equipment is in satisfactory working condition prior to the induction of anesthesia.

## **II. Monitoring during Anesthesia**

### **A. Oxygenation**

#### **1. Oxygen Supply**

- Must be available and adequate.
- When nitrous oxide or other supplemental gases are used, the concentration of oxygen in the inspired gas should be checked constantly during the conduct of anesthesia.
- An oxygen supply failure alarm and a device protecting against the delivery of a hypoxic gas mixture are recommended.
- A system must be used to prevent misconnection of gas sources.

#### **2. Oxygenation of the Patient**

- Tissue oxygenation must be monitored. Adequate illumination and exposure of the patient should be ensured unless appropriate monitors are used.
- The continuous use of a quantitative monitor of oxygenation, such as Pulse Oximetry, is recommended.

### **B. Airway and Ventilation**

- Adequate of airway and ventilation should be monitored. Movements of the reservoir bag should be observed. Continuous monitoring with a precordial, pretracheal or esophageal stethoscope is highly recommended.
- Confirmation of the correct placement of the endotracheal tube and the adequacy of ventilation by continuous measurements and display of carbon dioxide waveform and concentration (Capnography) is encouraged.
- When mechanical ventilation is employed, a “disconnect alarm” should be used throughout the period of mechanical ventilation.

## **C. Circulation**

### **1. Cardiac Rate and Rhythm**

- The circulation must be monitored continuously. Palpation or registration of the pulse and/or auscultation of the heart sounds should be continuous.
- Use of a plethysmograph, (as a “stand-alone” or as component of pulse oximetry) or an electrocardiograph are recommended.
- A functional defibrillator must be readily available in the OR complex.

### **2. Tissue Perfusion**

- Adequacy of tissue perfusion should be monitored continually by clinical examination. Continuous monitoring with plethysmography or capnograph is recommended.

### **3. Blood Pressure**

- Arterial blood pressure should be monitored at appropriate intervals (usually every 5 minutes) and more frequently, if indicated.
- Continuous display of arterial pressure is encouraged in appropriate cases.

## **D. Temperature**

- Body temperature should be monitored during anesthesia and surgery. A continual measurement is highly recommended in patients in whom change in temperature is anticipated, intended or suspected.

## **E. Depth of Anesthesia**

- The depth of anesthesia should be regularly assessed through clinical parameters and measurements.

## **F. Neuromuscular Function**

- Whenever neuromuscular blocking drugs are administered, the use of a peripheral nerve stimulator is recommended.
- Recovery from neuromuscular blockade must be assessed clinically and if possible, with the use of peripheral nerve stimulator.
- Reversal of neuromuscular blockade is recommended whenever appropriate.

### III. Post Anesthesia Care

#### A. Facilities and Personnel

- All patients who have had an anesthetic affecting central nervous system function and/or loss of protective reflexes should remain where anesthetized or be transported to a location specifically designated for post-anesthesia recovery.
- The anesthesiologist is responsible for the transport of patient and transfer of care to appropriately trained personnel.
- The anesthesiologists retains overall responsibility for the patient during the recovery period and must be readily available for consultation until the patient has adequately recovered from the anesthetic.
- **Minimum requirements** for a Post Anesthesia Care Unit (PACU) are:
  1. Suitable beds capable of manipulation
  2. Oxygen supply and appropriate delivery equipment
  3. Emergency cart with drugs and equipment
  4. Cardiac monitor and defibrillator
  5. Monitoring equipment: blood pressure measurement, thermometry, pulse oximetry whenever possible.
  6. Suction apparatus
  7. Readily-available positive pressure delivery equipment
  8. Easy and rapid communication to summon medical help
- A discharge protocol should be observed in the transfer and discharge of patients from the PACU.
- All patients must be evaluated by an anesthesiologist before discharge from the PACU.

#### B. Monitoring

- All patients should be observed and monitored in a manner appropriate to the state of their nervous system function, vital signs and medical condition; with emphasis on oxygenation, ventilation and circulation.

## REMOTE ANESTHESIA

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This pertains to the administration of anesthetics outside the operation room suites. All patients in these areas who are given an anesthetic are entitled to the equivalent standards of care and monitoring during anesthesia and recovery, as they would receive within the operating room.

These areas are, among others:

Ambulatory facilities

Obstetric Suites: Labor room

Delivery room

Radiology: Catheterization Labs

CT Scan

Magnetic Resonance Imaging

Radiotherapy

Endoscopy rooms

Emergency rooms

Dental surgery

Electroconvulsive therapy

Lithotripsy

Suitable adaption of techniques and equipment to monitor patient care are required in these areas since close physical monitoring is not always possible due to specific hazards.

# EQUIPMENT REQUIREMENTS

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## I. Basic Requirements

### A. For anesthesia administration

- Oxygen supply
- Anesthesia machine
- Anesthesia agents:  
I.V. drugs and inhalation anesthesia
- Calibrated vaporizer
- Anesthesia delivery system

### B. For Patient Monitoring

- Stethoscope
- Sphygmomanometer
- Light source
- Thermometer
- Oximeter

### C. For patient support

#### ***Airway management***

- Airways, masks
- Laryngoscope
- Endotracheal tubes
- Cricothyrotomy equipment
- Tracheostomy set

#### ***Ventilatory support***

- Self-inflating bag (Resuscitation bag)
- Oxygen supply

#### ***Circulatory support***

- Needles, syringes
- Cannulae, infusion fluids

#### ***Drug Therapy***

- Basic drugs and medicines  
for emergency and resuscitation

## II. Intermediate Requirements

includes the **Basic Requirements PLUS:**

### A. For anesthesia administration

- Gas concentration monitors

### B. For patient monitoring

- Oximeter
- Electrocardiogram

### C. For patient support

- Defibrillator

## III. Optimal Requirements

Includes **Basic and Intermediate Requirements PLUS:**

### A. For anesthesia administration

- Anesthesia machine with an integrated monitoring of its functions

### B. For patient monitoring of airway/ventilation

- Capnograph
- Respiratory volume monitor
- Airway pressure alarm
- Peripheral nerve stimulator

#### of circulation

- Automated blood pressure
- Invasive hemodynamic pressure monitoring

### C. For patient support

- Mechanical ventilator

## IN ADDITION:

1. A separate means of inflating the lungs with oxygen should be available in every anesthesia location in case of major failure of anesthesia apparatus.
2. A source of suction should be available at all times.
3. Equipment for managing difficult airways.
4. Additional drugs, other than anesthesia drugs, necessary for management of conditions which may complicate anesthesia.

# **CLINICAL ANESTHESIA PRACTICE GUIDELINES**

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## **A. Duties of a Specialist Anesthesiologist**

The Specialist anesthesiologist is required to cultivate and maintain high standards of practice and ethical behavior in relation to anesthesia, related disciplines and other branches of the medicine.

The anesthesiologist recognizes that:

- Regular clinical involvement and practice is necessary to maintain clinical skills.
- Updating is mandatory after absence from regular practice of Anesthesia.
- Maintenance of proper physical and mental health impacts on the ability to practice.
  - \* Chemical dependences is unethical and incompatible with Safe Anesthesia Practice
- Peer Review mechanisms should be an accepted part of Anesthesia practice.
- Adequate time must be available for education, quality assurance activities, interaction with other colleagues and maintenance of professional contacts.
- Adequate rest periods and prevention of fatigue are required to maintain high standards of professional care.

## **B. Areas of Involvement of an Anesthesiologist may include:**

- Anesthesia education
- Research
- Organizing and managing pain services
- Resuscitation services
- Involvement with critical care services
- Administrative duties
- Educational activities of medical, paramedical, community groups.
- Peer Review activities
- Maintenance of personal and professional clinical standards.
- Contribution to professional bodies, associations and organizations.

## **RECOMMENDED MINIMUM REQUIREMENTS FOR HOSPITALS**

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### **I. Primary Hospitals**

with Delivery Facilities are **encouraged** to acquire the **Basic Requirements**

### **II. Secondary Hospitals**

**must** have the **Basic Requirements**

### **III. Tertiary Hospitals**

**must** have the **Intermediate Requirements**

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