Patient Monitoring Standards

(An Elaboration of Standard V of Standards for Nurse Anesthesia Practice)

Source: Guidelines and Standards for Nurse Anesthesia Practice.

Basic to safe anesthesia care is the application of qualitative and quantitative monitoring which enables the anesthetist to administer anesthesia and evaluate its effect in a manner that optimizes desired responses while minimizing the risks of anesthesia. Fundamental to this endeavor is the use of multiple monitoring modalities which play vital roles in assisting anesthetists to provide conscientious care to patients receiving anesthesia.

These patient monitoring standards are intended to assist the CRNA practitioner in providing consistent, safe anesthesia care.

These standards apply to patients undergoing general, regional or monitored anesthesia care for diagnostic or therapeutic procedures in designated anesthetizing locations. In extenuating circumstances, the CRNA must use clinical judgment in prioritizing and implementing these standards. All of these standards do not normally apply to epidural anesthesia for labor or pain management therapy. The standards may be exceeded in any or all respects at any time at the discretion of the anesthetist, as required by individual patient needs.

While the standards are intended to encourage high quality patient care, they cannot insure specific patient outcomes. It is recognized that appropriately used monitoring modalities may fail to detect untoward clinical developments. Further, it is recognized by the AANA that under some circumstances certain monitoring standards may not be applicable. While this is a fact of practice, the omission of one or more monitoring standards should be documented and the reason stated on the patient’s anesthesia record. Interruptions in monitoring may be unavoidable. Occasionally, the anesthetist must work at some distance from the patient because of an environmental hazard such as, but not limited to, radiation. Under such circumstances, provisions for monitoring the patient must be made and documented on the patient’s anesthesia record.

Adequate facilities must exist to enable remote patient monitoring.

The standards are subject to review and revision from time to time, as indicated by technology and practice.

Anesthesia Providers

Continuous clinical observation and anesthetist vigilance are the bases of safe anesthesia care. The anesthetist, or nurse anesthesia student, shall be in constant attendance of the patient until the responsibility for care has been accepted by another qualified health care provider.

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Patient Monitors

Ventilation

Purpose:
To assess adequate ventilation of the patient.

(Standard in effect until October 1, 1992):

Standard:
Ventilatory adequacy shall be assessed by continuous auscultation of breath sounds. Correct placement of an endotracheal tube must be verified by auscultation, chest excursion and end tidal CO₂ monitoring when available. Other quantitative ventilatory devices may be used in conjunction with auscultation, such as spirometry and ventilatory pressure monitors.

Breathing system disconnect monitor: When the patient is ventilated by an automatic mechanical ventilator, the integrity of the breathing system must be monitored by a device that is capable of detecting the disconnection of any component of the breathing system. Such a device shall be equipped with an audible alarm which is activated when its limits are exceeded.

(Standard to become effective October 1, 1992):

Standard:
Intubation of the trachea shall be verified by auscultation, chest excursion and confirmation of carbon dioxide in the expired gas. Controlled or assisted ventilation during the anesthetic shall be monitored continuously with an end-tidal carbon dioxide monitor. Additionally, spirometry and ventilatory pressure monitors may also be used.

Breathing system disconnect monitor: When the patient is ventilated by an automatic mechanical ventilator, the integrity of the breathing system shall be monitored by a device that is capable of detecting the disconnection of any component of the breathing system. Such a device shall be equipped with an audible alarm which is activated when its limits are exceeded.

Oxgenation

Purpose:
To assess adequate oxygenation of the patient.

Standard:
Adequacy of patient oxygenation shall be monitored continuously with pulse oximetry. In addition to pulse oximetry, oxygenation shall also be monitored by observa-

tions of skin color, the color of the blood in the surgical field and arterial blood gas analysis when indicated.

During general anesthesia, the oxygen concentration delivered by the anesthesia machine shall be monitored continuously with an oxygen analyzer with a low oxygen concentration limit alarm. An oxygen supply failure alarm system shall be operational to warn of low oxygen pressure to the anesthesia machine.

Circulation

Purpose:
To assess adequacy of the cardiovascular system.

Standard:
Blood pressure and heart rate shall be determined and recorded at least every 5 minutes.
The patient’s electrocardiogram shall be monitored continuously during the course of the anesthetic.
Circulation also shall be assessed by at least one of the following measures: digital palpation of pulse, auscultation of heart sounds, continuous intra-arterial pressure monitoring, electronic pulse monitoring or pulse oximetry.

Body Temperature

Purpose:
To assess changes in body temperature.

Standard:
Body temperature shall be intermittently or continuously monitored and recorded on all patients receiving general anesthesia; the means to monitor temperature shall be immediately available for use on all patients receiving local or regional anesthesia and used when indicated.

Neuromuscular Function

Purpose:
To assess neuromuscular function.

Standard:
The means to evaluate the patient’s neuromuscular function by the use of a nerve stimulator shall be available immediately when neuromuscular blocking agents have been used.

Anesthesia Equipment

A complete equipment safety check shall be performed daily and an abbreviated check of all equipment shall be performed before each anesthetic is administered.
All anesthesia machines and monitoring equipment shall conform to the appropriate national and state standards. An ongoing preventive maintenance program shall be established and enforced.