Guidelines for the Practice of Anesthesia in Norway

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Introduction
The purpose of these guidelines is to ensure a satisfactory standard for the practice of anesthesia in Norway. The guidelines are designed as a series of recommendations for the practice of anesthesia, which in this context includes general anesthesia, regional anesthesia, deep sedation (see appendix for sedation levels), postoperative monitoring and other observations in which anesthesia personnel are involved. The guidelines apply to all doctors, nurses, and other personnel performing delegated anesthesia-related tasks. Reasons for any deviations from the guidelines must always be documented. The guidelines must also be adhered to in medical emergencies as far as possible. The guidelines must not be allowed to delay the implementation of lifesaving measures. The guidelines must be revised at regular intervals to keep abreast of current legislation and developments in medical and technological practice.

1. Organization and legal responsibilities

a) Medical management and responsibility
Anesthesiology is a medical speciality. The practice of anesthesia in a hospital must be determined by the department of anesthesia’s Chief Consultant. Departments of anesthesia must include all personnel whose main task is the practice of anesthesia. Where anesthesia is practiced outside the hospital, a specialist in anesthesiology must have the professional and legal responsibility. It must be clear at all times which doctor is responsible for any given anesthesia.

b) Duty roster
There must be an anesthesiologist (medical specialist in anesthesiology) on call at all times in hospitals that admit surgical and obstetric emergencies. The departmental management should approve the duty roster for the nurse anesthetists. If the volume of work at any given hospital requires medical specialists (e.g. in surgery, obstetrics/gynecology, orthopedics, etc.) to be on call, there will be a corresponding need for anesthesiologist cover.

c) Interim regulations for hospitals without an anesthesiologist
In hospitals where there is no anesthesiologist or where a continuous duty roster for a specialist in anesthesiology cannot be ensured, procedures and legal responsibilities must be agreed with the medical management of the hospital. The hospital owners must endorse this agreement. Before local procedures and legal responsibilities are endorsed, the consultant in charge of anesthesia practice in the relevant hospital, the Norwegian Medical Association through the Norwegian Society of Anesthesiology (NAF) and the Norwegian Nurses Organisation through the Norwegian Association of Nurse Anesthetists (NANA) must be consulted. If no anesthesiologist is available during the administration of anesthesia, then the legal responsibility for the anesthesia rests with the doctor in charge of the patient.

d) Competence of nurses with specialist training in anesthesia nursing
Nurse anesthetists provide nursing care and perform delegated anesthesia-related tasks. Specialist training in anesthesia nursing provides the nurse anesthetist with the expertise to carry out these functions. The specialist training programme is completed at a university college and is based on an officially approved national curriculum KUF 17.11.99) Nurses who have completed the specialist training in anesthesia nursing are qualified to administer general anesthesia to patients with no functional disability (ASA classes I and II). They are also qualified to monitor patients under regional anesthesia and deep sedation. The
anesthesiologist responsible for the patient decides upon the method and type of anesthesia. If the anesthesia deviates from its expected course, the nurse anesthetist must immediately inform the doctor in charge.

e) Training
Every department of anesthesia should have an introductory programme for newly employed personnel. Departments also have a duty to organise continuous in-service training to maintain a high level of professional expertise in its staff. Doctors and nurses must not be given tasks beyond their level of expertise during their training period.

2. Control and use of biomedical equipment
The management of each department of anesthesia is responsible for developing written instructions for biomedical equipment with regard to:

- Storage
- Registration
- Cleaning
- Preparation for use
- Checking routines
- Use
- Maintenance

All biomedical equipment must be registered. There must be written instructions in Norwegian for the use of each piece of equipment. There must also be a system for training personnel in the use of the equipment.
The anesthetic machine, ventilator and breathing system must always be checked before use. The user must always sign to verify that this check has been carried out and approved.

3. Preoperative assessment and patient information
There must always be a medical decision by a doctor that an anesthetic is required. Case notes including all current information plus any previous records of anesthesia must be available. All patients must be seen and assessed by an anesthesiologist. The assessment can be delegated to nurse anesthetists by agreement. This assessment involves checking and evaluating the following medical information:

- History of previous anesthesia
- Physical status
- Current medication
- Preoperative fasting
- Allergies or drug intolerance
- Dental prostheses
- Mouth opening
- Range of neck movement
- Bleeding tendencies
- Results from supplementary investigations

The use of the ASA classification system is recommended for the preoperative assessment of physical status (see point 9.Appendix).
The final evaluation must also take into consideration the planned anesthesia and the type of surgery to be performed. The patient must be informed about the choice of premedication and anesthetic technique, any special risk factors and the early recovery period.
4. Performance of anesthesia-related work
The following must always be readily available:

- A self-expanding ventilation bag
- A reserve source of oxygen
- Suction equipment
- Drugs and equipment for emergency medical treatment

All departments of anesthesia must have procedures for preoperative fasting before undergoing planned general or regional anesthesia. Intravenous access is necessary for both general and regional anesthesia as well as for deep sedation. It is also recommended when administering large doses of local anesthetic agents.

Drugs and syringes must be clearly marked with the name and concentration of the drug. An anesthesiologist or nurse anesthetist must stay with the patient at all times. The person administering the general or regional anesthesia must always have an assistant with anesthesia training close at hand. When administering general anesthesia in order to perform surgical or diagnostic procedures and treatments, the assistant must always have anesthesia training.

When performing procedures such as tracheal intubation, the assistant must have sufficient skill and expertise to be able to provide necessary aid in the case of serious complications occurring. There must always be a reliable means of communication available out of the room where anesthesia is administered.

Special attention must be paid to the expertise and experience of personnel when administering anesthesia to children. In principle, an anesthesiologist should always be present when administering anesthesia to children.

During stable regional anesthesia the anesthesiologist in charge may delegate the monitoring of the patient to trained personnel without specialist training in anesthesia. In such cases it must be possible to call the anesthesiologist or a nurse anesthetist immediately.

Planned deep sedation with titrated doses of intravenous anesthetic agents must be managed by an anesthesiologist.

5. Monitoring during anesthesia
The patient’s circulation and ventilation must be continually monitored. Monitoring and recording of the following measurements should generally start before induction and continue until the patient has recovered from the effects of anesthesia:

- Pulse and blood pressure at least every 10 minutes
- Pulse oximetry*
- Electrocardiogram (ECG)*, displayed continuously
- End-tidal carbon dioxide concentration for intubated patients
- Disconnection alarm when using a ventilator
- Oxygen analysis in the breathing system
- Core body temperature where deviation in temperature is intended, expected or suspected

- A defibrillator must be available if necessary.

*Display of the ECG can be omitted for healthy patients undergoing minor procedures if pulse oximetry is being used.

The following patient monitoring is recommended:

- Multi-gas analyser (obligatory during circle anesthesia with low fresh gas flow)

The monitoring equipment must have functional alarms. During infiltration anesthesia clinical observation is usually sufficient, but additional monitoring may be necessary.
6. **Documentation**

The anesthetic record must be updated continuously during the administration of anesthesia. The anesthetic record is an independent document which must record all important information concerning the anesthesia and its course. It must include the following information:

- Date and the exact times of any important procedures
- Identification of the patient
- The preoperative diagnosis and ASA physical status class
- The anesthetic machine and breathing system in use
- Details of the anesthetic machine/system check
- The patient’s position
- Other equipment used, and where it was attached to the patient
- Exact times and quantities of drugs, i.v. fluids, and blood products given
- Exact times of observations recorded
- Details of any problems and how they were dealt with
- Name and/or code of the anesthetic technique used
- Name and/or code of the surgery/investigation performed
- Names of all personnel involved
- Name of the doctor responsible for the anesthesia
- Instructions for postoperative care

Standardized automated recording of a number of basic variables is recommended. This would enable Norwegian departments of anesthesia to compare reports regarding the volume of work, patient load, types of surgery performed, methods of anesthesia used, and the occurrence of problems during and after anesthesia.

**Reporting of anesthesia-related problems**

After the completion of the anesthesia, it is extremely important that the patient is informed of any unexpected and dangerous occurrences.

The anesthesiologist in charge must:

- Record in both the anesthesia record and the patient’s case notes any unexpected and potentially dangerous complications which occurred, such as adverse drug reactions, intubation difficulties etc.
- Inform the patient of any complications which may be significant for future anesthesia or treatment. Any significant occurrences must be documented in writing and given to the patient before the patient leaves the hospital.
- ‘The Anesthesia Problem Card’ which patients can carry with them at all times, must be completed. The Anesthesia Problem Card is produced by Tapir Trykkeri, Nardovn. 14, 7005 Trondheim (tel.: 73593200, e-mail: trykkeri@tapir.no)

In the case of adverse drug reactions or other serious anesthetic problems, the patient’s case notes must be clearly marked.

7. **Monitoring after anesthesia**

All hospitals where anesthesia is carried out must have adequate facilities for monitoring patients after anesthesia/surgery. Patients must preferably be monitored in specially designated recovery or intensive care units. These units must have the necessary equipment and personnel trained to monitor, diagnose, and manage variations in level of consciousness,
circulation, and respiration. When patients are monitored postoperatively on ordinary wards, the hospital management is responsible for ensuring that the same monitoring standards are maintained. Anesthesia personnel familiar with the course of the anesthesia administered must accompany the patient to the recovery unit. The immediate postoperative period, including the transfer of the patient to the recovery unit, is a high risk period. The use of supplementary oxygen, a pulse oximeter and possibly ECG must always be considered. Anesthesia personnel must not leave the patient until the recovery staff has been given a report and are ready to assume responsibility. As a rule patients must be monitored until they are awake and hemodynamically and respiratory stable. The anesthesiologist decides when the patient is ready to be discharged from the recovery unit.

8. Criteria for discharge of day-cases
When selecting patients for day-case surgery the following points must be taken into consideration:
- The type and extent of surgery to be performed
- The choice of anesthetic technique and any risks of delayed complications
- The method of postoperative pain relief
- The patient’s consent to day-case surgery
- The patient’s overall suitability, taking into account physical and mental health and social circumstances
Patients in ASA class III may be accepted as day-cases if their physical status is stable. An anesthesiologist must assess patients in ASA class III before they are accepted for day-case anesthesia.

Criteria for discharge:
- The patient’s circulation and respiration must be stable
- The patient must be awake and oriented with regard to time, place, and situation, be able to dress him/herself and walk steadily without assistance
- The patient must have passed urine. If not, the patient must be instructed to contact the hospital if problems arise after discharge
- The patient must be able to drink
- The patient must not have any nausea, vomiting or pain requiring treatment by injection
- There must be no sign of any complications

As a rule, a responsible adult must accompany the patient home. The home situation must be suitable for discharge the same day, and the patient must not be left alone on the first night. The patient must be given information and written instructions before anesthesia. Special emphasis must be placed on limitations to activities demanding concentration and alertness. The telephone number of the doctor in charge or a competent deputy must be given to the patient before leaving the hospital.

9. Appendix
ASA classification system
Criteria for sedation