

A Comprehensive Review of Perioperative Nursing Roles and Responsibilities

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ABSTRACT

Perioperative nursing assessment is a critical component of ensuring safe and effective surgical care. This article provides an overview of key considerations for perioperative nurses in conducting comprehensive patient evaluations. Historically, the connection between preoperative assessment, patient preparation, and postoperative outcomes has been well-established. The increasing frequency of procedures performed in outpatient settings necessitates tailored preoperative assessments that balance patient safety and comfort. Thorough preoperative planning and communication have been shown to reduce perioperative morbidity and mortality. Conducting a physical examination allows nurses to identify and document abnormalities, guiding individualized care throughout the perioperative journey. Effective communication and rapport-building are essential for gathering relevant patient information and addressing concerns. Specific considerations are necessary for patients with hearing or visual impairments, as well as those with prosthetic devices or dentures. Reviewing the patient's medical, surgical, and anesthesia history aids in anticipating needs and preventing complications. Legal issues surrounding advance directives and ethical dilemmas may arise, requiring adherence to professional standards and codes of conduct. Surgical risk factors in adolescents include adverse reactions to anesthesia, coexisting conditions, substance use, and medication interactions. Intraoperative risks can be mitigated by assessing adherence to preoperative instructions, removing jewelry and piercings, and evaluating overall health status. Proper patient positioning and padding are crucial for preventing skin breakdown and pressure injuries, particularly in elderly or obese patients. Allergies and familial anesthesia-related complications must be thoroughly screened and documented. By conducting comprehensive assessments and collaborating with the surgical team, perioperative nurses play a vital role in optimizing patient outcomes and ensuring a successful surgical experience.

Keywords: Nurse, Operation Room, Perioperative Assessment.

Introduction

A comprehensive evaluation of the surgical patient begins in the preoperative phase and extends throughout the perioperative period. Patient-centered interviews are essential for collecting critical data that inform a targeted care plan and contribute to a successful surgical experience. The information gathered, documented, and communicated to the surgeon or physician supports effective medical decision-making (Brannon & Carson, 2013). This article examines perioperative nursing assessment tools and addresses key issues related to ensuring safe care delivery. It offers a broad overview of significant topics warranting further exploration and analysis, with the aim of serving as a practical resource to guide clinical decision-making processes.

Historically, long before the establishment of dedicated operating room suites, surgical procedures were conducted in unconventional settings such as kitchen tables, battlefields, and barber chairs. Nurses assisting surgeons often prepared these makeshift surgical environments at patients' homes. In the 19th century, as technological advancements emerged, there was an increasing emphasis on patient safety and the sterility of surgical areas. This led hospitals to develop operating suites

and adopt improved aseptic techniques. By the early 1920s, as is the case today, nurses were central advocates for surgical patients. Research from the 1960s and 1970s revealed a connection between preoperative assessment, patient preparation, and postoperative outcomes (Phillips, 2013). These studies demonstrated that patient outcomes improved when their physiological and spiritual needs were met, along with receiving adequate education. This evidence has been instrumental in the creation of preoperative assessment tools for perioperative nurses, greatly enhancing recovery outcomes (Oermann et al., 2011).

In 2002, the American Society of Anesthesiologists (ASA) Task Force on Preanesthesia Evaluation published a practice advisory report to aid decision-making in the absence of scientific evidence (Maurer et al., 2014).

Preliminary Assessment

Evaluating the patient's understanding of the planned surgical procedure helps the perioperative nurse assess the level of family support available to the patient, which is vital for postoperative needs such as encouraging ambulation, managing pain, and supporting recovery efforts (Li, 2015). The importance of family involvement has grown in recent years due to the rise in surgeries performed in outpatient settings, including physician offices, free-standing ambulatory surgery centers, and hospital-affiliated surgicenters (Majasaari et al., 2016).

The increasing frequency of procedures outside traditional hospital settings necessitates a tailored preoperative assessment, as patients in these contexts are not routinely subjected to comprehensive diagnostic tests such as EKGs, laboratory analyses, and chest radiographs. Perioperative nurses in these environments must conduct thorough evaluations that balance patient safety and comfort while facilitating surgical progress. Crucial information to collect includes the patient's height, weight, allergies, comorbidities, and current medications. Identifying specific allergies, such as latex sensitivity, is vital for creating a safe surgical environment. This may involve substituting latex-containing materials with alternatives. Many operating rooms now operate as essentially latex-free environments to address this concern.

The objectives of the preoperative assessment include gathering relevant patient information and formulating an intraoperative care plan that respects the patient's individual preferences and goals. Research has shown that thorough preoperative planning and communication reduce perioperative morbidity and mortality. Effective collaboration between the perioperative nurse and the patient fosters better recovery outcomes and mitigates potential complications in the operating room (Canobbio, 2016). This collaborative process enables the perioperative nurse to collect the necessary data for accurate diagnosis, care planning, and implementation (Hutchisson et al., 2010).

Conducting a physical examination is a critical component of the assessment, allowing the nurse to observe and document abnormalities, discuss findings with the patient, and record them in the preoperative medical chart (Suneja et al., 2020). These assessments guide individualized care throughout the perioperative journey and enable nurses to develop accurate nursing diagnoses, identify educational needs for patients

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and families, and implement interventions aimed at achieving desired outcomes (Rothrock, 2017).

Recent trends have shifted surgical procedures from hospitals to outpatient settings, such as physician offices, adjacent facilities, and free-standing centers. This shift has made preoperative assessments more crucial, particularly in ensuring patient safety and facilitating intervention, education, and discharge planning within limited timeframes (London, 2014).

Comprehensive assessments by perioperative nurses determine whether a patient is a suitable candidate for surgery in settings such as physician offices, ambulatory centers, or traditional hospital operating suites (Hurford et al., 2002). Following discussions with the patient and reviewing their medical and surgical history, the nurse may identify additional tests needed to optimize outcomes (Brannon & Carson, 2003). Patient age and mental status are significant factors influencing the choice of surgical setting; for instance, younger patients with sound mental faculties are better suited for ambulatory centers than individuals with cognitive impairments like dementia.

The anticipated need for rehabilitation services and the likelihood of blood transfusions are additional considerations when choosing the appropriate surgical facility. Patients requiring extensive postoperative therapy may be unsuitable for ambulatory centers unless adequate follow-up care can be arranged, such as through a nursing home. Additionally, family support is essential in ensuring the patient receives adequate assistance and knows whom to contact for further support if necessary (Busen, 2001). Cost-effectiveness is another important factor influencing facility selection.

A thorough assessment fosters trust between the perioperative nurse and the patient. Utilizing a patient assessment form before the preoperative interview provides valuable insights into the patient's medical history. When completed by the patient or their family, this form helps the nurse identify areas requiring further exploration. It also supports an organized and timely evaluation, ultimately enhancing the quality of care.

COMMUNICATION

When interacting with a patient for the first time in the preoperative holding area, perioperative nurses should introduce themselves clearly and audibly to both the patient and their family. The nurse's name tag should be prominently displayed for the patient's reference (Lange, 2012). Surgical masks should not be worn during this interaction, and maintaining eye contact is essential. Nurses should actively acknowledge and address any concerns or questions raised by the patient or their family.

Establishing a positive patient experience begins with building rapport, gathering specific details about the patient's medical history and symptoms, understanding the planned surgical procedure, and assessing family support. If family

members are not present during the preoperative interview, the nurse should ascertain the best method to contact them post-surgery. Effective communication is achieved through patient-centered behaviors that affirm the patient's dignity and worth. Nurses who create a supportive, nonjudgmental atmosphere foster patient comfort and well-being. Behaviors such as attentiveness, friendliness, respect, and unobtrusiveness are particularly valued, especially when caring for younger or older patients (Jacelon, 2012).

INTERVENTION

Patients with hearing aids may sometimes wear them during surgery, depending on the procedure. The nurse should inquire about adjusting the hearing device in case of malfunction. Patients may also choose to wear their glasses into the operating suite; if removed during surgery, the glasses should be labeled and securely stored, then returned in the recovery room. Contact lenses, however, should be removed prior to the patient leaving the preoperative area, as they can dry out and damage the cornea.

For visually impaired patients, additional considerations are necessary to ensure their comfort. Nurses should always announce their presence before making physical contact and remember that blindness does not imply deafness. Speaking at a normal but audible tone is more appropriate than raising one's voice. Providing verbal descriptions of the surroundings and warning of any unexpected sounds can help alleviate the patient's anxiety.

The anesthesiologist will decide whether the patient can retain their dentures during surgery, as dentures can assist in airway management and facilitate safer anesthesia induction. If a prosthetic device is involved, the perioperative nurse and anesthesiologist should jointly decide if it can remain in place during surgery. If removal is necessary, the device should be appropriately labeled and stored, either under the patient's gurney or in their hospital room if admitted.

DATA COLLECTION

The patient's medical history should be included in their chart and reviewed with them at the start of the interview. This history aids the perioperative team in determining accurate diagnoses and planning appropriate care. When discussing medical history, the nurse should ask about prior hospitalizations and their outcomes, as preexisting conditions may influence both the care provided and surgical outcomes. A knowledgeable perioperative nurse can provide reassurance to patients experiencing anxiety. Exploring details beyond the obvious is critical in forming a foundation for nursing diagnoses (Brannon & Carson, 2003).

The patient's surgical and anesthesia history should also be obtained to help anticipate needs and prevent complications, such as malignant hyperthermia. The nurse must verify that a current history and physical examination have been completed within the hospital's protocol timeline. Additionally, signed surgical and anesthesia consent forms must be present in the chart, completed by both the provider and the patient.

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LEGAL ISSUES

If the patient has legal documents such as a medical power of attorney, living will, or advance directive, copies should be placed in the chart in a readily accessible location. Advance directives that indicate a “do not resuscitate” (DNR) order are typically suspended during surgery. Many hospitals now use supplemental forms allowing patients to specify their preferences for resuscitative measures during the operation. Discussions involving the anesthesiologist, surgeon, and perioperative nurse address ethical considerations and implications of these directives, with the patient’s wishes documented.

Documentation should include the surgery’s purpose, the likelihood and scope of resuscitative measures, and the outcomes associated with resuscitation or lack thereof. If the patient opts to suspend their DNR order, the timeline for reinstatement must also be recorded. Should the nurse feel uneasy about the patient’s choices, they have the right to request reassignment. If reassignment is not possible, the patient’s decisions take precedence.

Ethical dilemmas may arise, such as caring for an unresponsive patient whose family has not been informed or addressing questionable surgical practices. The perioperative nurse’s responsibility is to advocate for the patient by adhering to professional standards and codes of conduct (Brownsey, 2011). These include accountability for one’s actions and responsibilities toward the public, healthcare team, and nursing profession.

Noncompliance with professional standards may result in disciplinary actions, including suspension, termination, or license revocation. Nurses encountering ethical challenges are encouraged to consult the facility’s ethics committee or the state nursing board. The ethics committee serves as a resource for addressing issues related to advance directives, DNR orders, living wills, patient rights, and confidentiality, providing valuable support and guidance (Brownsey, 2011).

SURGICAL RISK FACTORS

In otherwise healthy adolescents, surgical risks are primarily associated with the type and scope of the procedure. These risks include adverse reactions to anesthesia, which may result in cardiac and pulmonary complications such as bronchospasm, aspiration pneumonia, hypoxia, cardiac arrhythmias, and cardiac arrest. To mitigate these risks, the American Academy of Pediatrics (AAP) emphasizes the critical role of primary healthcare providers in conducting medical evaluations and preparing children and adolescents psychologically for surgery and anesthesia.

The primary goal for primary healthcare providers is to clearly define all medical issues and assess their physical and psychological impact on the patient. Detailed knowledge of the adolescent’s past and current medical history, including preoperative diagnostic and laboratory results, is valuable for perioperative nurses, the surgical team, the patient, and their family. Preparing adolescents for surgery involves specific goals for the surgical team, including:

- Ensuring patient safety
- Optimizing health
- Planning for perioperative management
- Assessing both preoperative and postoperative healthcare needs
- Reducing patient and family anxiety through appropriate education and interventions.

Coexisting Conditions

The presence of coexisting conditions may complicate anesthesia and increase surgical risks. Adolescents with acute upper respiratory infections are at risk of hypoxemia, bronchospasm, and laryngospasm during anesthesia. Elective surgeries for these patients should be postponed until symptoms resolve. Patients and their families should always be informed that surgery might be canceled or rescheduled if a current or emerging illness compromises optimal surgical or anesthetic outcomes.

Adolescents with suspected heart murmurs require evaluation to determine pathology, with practitioners adhering to the American Heart Association (AHA) guidelines on prophylaxis before surgery. The AHA advises antibiotic prophylaxis during the perioperative period to lower the risk of bacteremia from endocarditis-causing organisms, especially in patients with prosthetic heart valves, a history of endocarditis, or congenital and acquired heart defects.

Chronic conditions, such as asthma and seizure disorders, require careful medication management. Patients with asthma should take their regular medications as close to their usual schedule as possible. Acute asthma exacerbations contraindicate elective surgery, and the condition should be stabilized before emergency procedures. The AAP recommends administering oral medications with a sip of water up to two hours before surgery and using bronchodilators as needed until the procedure begins.

Diabetes management poses unique challenges due to fluctuations in insulin needs during puberty, illness, or surgical stress. An intravenous (IV) line should be established early, and blood glucose levels monitored closely. Adolescents with unstable diabetes often require an endocrinology consult to ensure optimal management during the perioperative period. Obtaining a comprehensive history of the patient's usual preoperative glucose levels and insulin regimen aids in tailoring appropriate care.

Hematologic conditions, such as sickle cell disease and sickle beta-thalassemia, elevate risks of acute chest syndrome, hypoxia, stroke, and myocardial infarction. Emotional stress, dehydration, and postoperative infections can further predispose patients to hematologic crises. Perioperative management aims to prevent such crises through preoperative blood transfusions and meticulous fluid monitoring to avoid dehydration. Aggressive transfusion strategies aim to lower hemoglobin S levels below 30%, while conservative approaches maintain hemoglobin levels at 10 g/dL, targeting anemia correction and blood viscosity reduction. Some institutions avoid preoperative transfusions for stable patients undergoing elective, minor procedures due to potential transfusion-related complications.

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Anesthesia Risks

Anesthesia risks may arise from alcohol use, smoking, illicit drugs, and other substances such as dietary supplements and herbal products. Alcohol, as a central nervous system (CNS) depressant, may prolong sedation effects. Smoking and marijuana use elevate carbon monoxide levels in the blood, impairing oxygen transfer during and after surgery. The American Society of Anesthesiologists (ASA) recommends ceasing smoking six to eight weeks before surgery to maximize lung function.

Adolescents often use substances like inhalants, marijuana, and cocaine, with each posing specific anesthesia-related risk. Inhalant abuse can result in permanent CNS damage, while chronic marijuana use may cause hypoxia. Cocaine, as a CNS stimulant and vasoconstrictor, can lead to hypertension, tachycardia, and potentially fatal arrhythmias.

Adolescent male athletes may use anabolic steroids and ergogenics to enhance performance, with severe side effects including kidney damage and malignant tumors. Supplements containing ephedra may induce cardiac arrhythmias, while herbs like ginkgo biloba, ginger, and ginseng can impair coagulation, increasing bleeding risks. Other herbs, such as St. John's Wort and kava-kava, can extend anesthesia effects and cause hypotension.

All surgical candidates should disclose their use of herbal products and discontinue them at least two to six weeks before surgery. Adolescents may be hesitant to disclose substance use due to fear of repercussions or a lack of awareness regarding potential interactions with anesthesia. Healthcare providers should reassure patients that such information is essential for their safety and will be treated confidentially.

INTRAOPERATIVE RISKS

Open-ended questions should be used to assess the patient's adherence to preoperative instructions provided by the physician or anesthesiologist. The patient's level of compliance can significantly influence the choice of anesthesia. Relevant details include whether the patient has followed NPO (nothing by mouth) orders or stopped anticoagulants within the prescribed time frame. For patients at risk of aspiration, cricoid pressure may be applied, or regional anesthesia might be a safer alternative. Current NPO guidelines recommend fasting from solid foods at least eight hours before surgery. Exceptions are made for emergency cases, and clear liquids may be permitted up to two or three hours before surgery. Physicians may advise patients to take essential oral medications with a small sip of water on the day of the procedure. Specific guidance is often provided for children, patients with diabetes, and older adults who are prone to dehydration (Hurford et al., 2012). The American Society of Anesthesiologists (ASA) provides preoperative guidelines for insulin therapy management in these contexts.

During the preoperative assessment, the nurse should confirm the removal of all jewelry, including belly button rings and other piercings, as these can pose risks

during surgery. It is essential to address this specifically, explaining the potential hazards, such as burns caused by electrocautery. Patients may forget or fail to disclose certain body piercings; thus, nurses must inquire directly and ensure all piercings are removed to prevent complications (Larkin, 2014).

MEDICAL HISTORY

The assessment should include a thorough evaluation of the patient's overall health, skin condition, mobility restrictions, and use of prescription or over-the-counter medications. Medications such as antihypertensives, antianginals, antiarrhythmics, anticoagulants, anticonvulsants, and diabetes treatments must be noted, as they can interact with anesthetics or affect the body's physiological responses and hemodynamic stability during surgery (Miller, 2023).

For patients with insulin-dependent diabetes, the disease's systemic effects require specific attention. The ASA's algorithm for preoperative diabetes management offers a framework for insulin timing, anesthesia team notifications, and potential delays in transferring the patient to the operating room.

The patient's use of illicit drugs, tobacco, or alcohol must also be identified, as these factors can impact anesthesia tolerance, increase postoperative nausea and vomiting, and heighten the risk of malignant hyperthermia. Nicotine withdrawal can lead to irritability and anxiety, while habitual alcohol consumption may increase anesthesia tolerance, necessitating higher doses. Postoperatively, regional anesthetics may lead to peripheral neuropathy, which requires vigilant monitoring by the perianesthesia nurse (ASPAN et al., 2019).

RISKS FOR POSITIONAL INJURY

Specific areas of potential skin breakdown should be identified to optimize patient positioning and minimize discomfort. Since the skin serves as the body's primary barrier against external threats, the nurse must inspect for any preexisting damage that could heighten infection risks.

Elderly patients require particular attention to areas prone to skin breakdown or pressure points due to their thinner, more fragile skin, which is highly susceptible to injury during surgery. Obese patients, when positioned supine, may desaturate rapidly. In such cases, the semi-Fowler position may be more appropriate, and pillows or positioning devices can be used to elevate the patient's head. Obese patients typically have higher gastric content with lower pH, necessitating the application of cricoid pressure during anesthesia induction to reduce aspiration risks. The operating table must be assessed to ensure it can support the patient's weight, with additional positioning aids or two strapped tables used if necessary. The perioperative nurse should gather sufficient personnel and plan for special positioning needs based on the patient's body habitus and physical limitations.

Patients with arthritis, contractures, or similar physical impairments are at greater risk of pressure sores and may require innovative padding or positioning solutions. Proper assessment, preparation, and teamwork can prevent such complications and improve surgical outcomes.

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Sequential circulating devices (SCDs) were once reserved for patients at high risk of embolism but are now widely used as a preventative measure against thrombophlebitis and thromboembolism. The perioperative nurse must ensure these devices are applied to the patient's lower extremities or readily available on the gurney.

When assessing allergies, the type of allergic reaction experienced must be clarified. True allergic responses include symptoms such as hives, flushing, swelling, difficulty breathing, wheezing, or vascular collapse. Allergies to seafood or shellfish may signal a risk of reaction to intravenous contrast dyes, certain preparatory solutions, or specific anesthetics like protamine. All allergies must be verified with the patient or family, clearly documented on the patient's chart, and noted on their wristband. Screening for familial anesthesia-related complications, such as malignant hyperthermia or succinylcholine sensitivity, is also crucial.

Patients with sensitive skin may require specific antimicrobial agents for skin preparation. Alternatives like povidone-iodine, alcohol, chlorhexidine gluconate, or baby shampoo can be considered. If the surgeon prefers a specific agent, such as Betadine or alcohol, and the patient has a sensitivity, the nurse should notify the surgeon and recommend a suitable alternative to mitigate potential skin irritation.

Conclusion

The perioperative period is critical for ensuring patient safety, optimizing outcomes, and addressing individual needs. Nurses play an essential role in the comprehensive assessment, education, and care planning required to achieve these goals. By fostering effective communication, conducting thorough evaluations, and mitigating risks related to coexisting conditions and anesthesia, nurses ensure that patients are well-prepared physically and psychologically for surgical procedures. Furthermore, education and discharge planning empower patients and their families, enhancing recovery and reducing complications. As healthcare continues to evolve, the commitment to excellence in perioperative nursing practices remains vital in ensuring high-quality, patient-centered care.

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