Awake and talking: ambulatory surgery and conscious sedation

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The initial concept of ambulatory surgery began in when Massachusetts Hospital established the first outpatient department and has continued to evolve with the advent of new anesthetic agents and technologic advances such as conscious sedation and minimally invasive procedures. These advances require more skilled nursing care for patients with higher acuity levels and more complicated medical histories. Nurses are increasingly finding themselves immersed in the issue of conscious sedation. Escalating numbers of radiologic, invasive diagnostic, minor surgical procedures and the desire to enhance patient comfort intra-procedurally has created a demand for conscious sedation administration which anesthesia providers cannot meet (American Association of Nurse Anesthetists [AANA] Position Statement, 1991; American Society of Anesthesiologists, 1996; Association of Operating Room Nurses [AORN], 1992 & 1996; Holzman, Cullen, Eichhom, & Philip, 1994; Murphy 1994; Wilson, 1996). The present managed care environment has caused ambulatory surgery programs to focus on consumer needs, improving outcomes, and decreasing cost without compromising quality of care. Ambulatory surgery provides the same standard of care but is more efficient, costing an estimated 60% to 70% less than surgery performed in inpatient facilities (Anderson, 1994).

Accrediting Agencies

The law does not pretend to know the type of care that should be provided by health care professionals. It is the health care institution and professionals who establish standards that legally constitute quality care. Professional standards are developed from accrediting agencies, state statutes, credentialing boards, professional organizations, institutional rules and regulations, expert views, and the actual practice of health care practitioners (Kemmy, 1992). The Association of Operating Room Nurses (AORN) statement on perioperative nursing practice in ambulatory surgery recognizes the significance and importance of skilled perioperative nurses who are clinically and professionally competent to provide cost-effective, convenient, and efficient care to ambulatory surgery patients and their families (Watson & Sangermano, 1995). Hospitals and ambulatory surgery centers that desire insurance and Medicare reimbursement must be accredited by one of several agencies such as the American Association for the Accreditation of Ambulatory Surgery Facilities (AAAASF), the Accreditation Association for Ambulatory Health Care (AAAHC), or the joint Commission on Accreditation for Healthcare Organizations (JCAHO). Successful accreditation is now a large marketing tool for ambulatory surgery (Anderson, 1994; Gonen & Probyn, 1996).

Staffing and Scope of Practice

Downsizing, consolidations, affiliations, cost containment, and shorter lengths of stay are dilemmas affecting the number and type of staff used in ambulatory surgery settings. Managers are forced to do more with less and staffing is no exception. Adapting to new technologies, crosstraining, working in an atmosphere of flexible roles and teamwork, and care management are key to increasing cost efficiency in ambulatory surgery settings. The controversial use of unlicensed assistive personnel has expanded to the ambulatory surgery environment. As stated in the American Nurses Association Center for Ethical and Human Rights Communique ("Nurses and Unlicensed," 1996), nurses must consider the impact of the changing provider mix on their professional, legal, and ethical obligations. Provisions 3, 4, and 6 of the Code for Nurses (American Nurses Association, 1985) provides initial guidance and direction for nurses as they evaluate and assume professional responsibilities in working with unlicensed assistive personnel. If other qualified personal provide circulating services, a registered nurse must be immediately available to assist and supervise. According to JCAHO, immediately available means the RN can stop whatever he/she is doing and immediately assist and/or supervise.
Staff Training and Competency Testing

The AORN Standards and Recommended Practices for Perioperative Nursing state that the "standards are intended to assist perioperative nurses expand their knowledge, increase their sensitivity to human needs and maintain accountability to the consumer" and serve as a model to guide perioperative nursing practice (AORN, 1991). Ambulatory surgery nurses have a legal duty to function as reasonable and prudent nurses with similar experience and education would under similar circumstances. Ambulatory surgery nurses who function in the intraoperative phase of patient care have the same exposure as nurses working in traditional operating room settings plus the additional liability exposure of having less ability than inpatient nurses to control patient behavior in the pre and postoperative stages. Ambulatory surgery nurses who do not adequately prepare patients or who fail to assess patient compliance with preoperative instructions could share liability if a patient is injured as a result (Murphy, 1991).

Additional skills must be acquired and maintained for administering conscious sedation and monitoring patients (AORN, 1991 & 1992). The JCAHO Standards for Conscious Sedation require patients receiving conscious sedation and subsequent monitoring in an ambulatory setting be assured of receiving the same quality of care as patients in the traditional operating room. JCAHO standards do not specify which individuals can be involved in conscious sedation, this is left up to the institution to define. One definition of a qualified health care provider of conscious sedation is "an individual with training, skills, and experience to recognize and initiate an appropriate and timely response when a patient's changing condition requires medical intervention" (Constantino, 1996). Under JCAHO standards, a person not involved in the procedure must monitor the patient.

Standardized competency-based training programs establish baseline educational requirements and ensure comparable training throughout a facility. Individual departments should augment training programs with unit-specific details. Key components of a conscious sedation education program are listed in Table 1. Facility administration and the RN share responsibility in the education and skill acquisition process and should be familiar with their state's Nurse Practice Act concerning conscious sedation prior to engaging in the practice (Murphy, 1988). Professional organizations with position statements and recommended practices regarding the administration of conscious sedation by the RN are listed in Table 2. Essential components of a conscious sedation policy are described in Table 3.

Table 1.
Key Components in Conscious Sedation Education and Training Programs

* Basic cardiac life support certification (BCLS)
* Advanced cardiac life support certification (ACLS)
* Anatomy and physiology
* Pre-procedural or sedation assessment
* ASA physical status classifications and patient-selection criteria
* Conscious sedation vs. deep sedation, general anesthesia, and local anesthesia
* Medications, dosages, administration rates, onset/duration, adverse effects, contraindications, and antidotes
* Management and monitoring of patients before, during, and after conscious sedation
* Essential equipment and demonstrated competency
in operating and troubleshooting
  * Management of the emergency case
  * Patient education
  * Discharge criteria
  * Documentation
  * Medico-legal issues
  * Post-testing
    * Preceptorship to practice newly acquired skills
    and build confidence
    * Recertification at established time intervals

Table 2.
Professional Organizations with Conscious Sedation Administration Statements

American Nurses Association (ANA)
American Association of Nurse Anesthetists; (AANA)
Association of Operating Room Nurses (AORN)
Association of Post Anesthesia Care Nurses (ASPN)
Emergency Nurses Association (ENA)
Society of Gastroenterology Nurses (SGNA)
American Society of Anesthesiologists (ASA)
American Academy of Pediatrics (AAP)
Joint Commission on Accreditation of Healthcare Organizations (JCAHO)

Table 3.
Essential Components in Conscious Sedation Policies

  * Purpose
  * Definitions
  * Exceptions to the policy
  * Personnel allowed to administer medications and monitor patients
    * Training, competence, certification, and recertification
    * Necessary equipment and supplies
    * Medications
    * Patient-selection criteria and provisions for comparable levels of care
    * Patient preparation
    * Intra and postprocedural monitoring parameters
    * Documentation
    * Discharge criteria

Sources: AORN, 1991, p. 105; Somerson et al., 1995, p. 28

Patient-Family Education

"Preoperative nursing assessments and patient education are vital elements in providing quality care to patients undergoing all
types of surgical procedures” (Bruce, 1993, p. 262). Patient assessment and education are ideally initiated before the day of surgery but the present health care reimbursement system no longer allows for hospital admission prior to most surgical procedures. This has created time constraints when patients arrive just before procedures and are discharged shortly after surgery or up to 23 hours later. An incredible amount of information must be elicited, assimilated, and communicated to and from patients, caregivers; and families, and other health care providers in a very short period of time resulting in decreased time for pre and postoperative patient education (Redmond, 1993). If proper time and attention are not given to preparing patients, it could potentially create a cycle that raises health care and hospitalization costs. Patient teaching is even more important in the ambulatory setting where patients are more a partner in their care rather than recipients of nursing care. This partnership brings with it increased patient responsibility and a legal duty to be reasonable and prudent in conduct. Patients are not expected to know what is reasonable preoperative and postoperative conduct unless they have been taught what it is. Failure to teach patients or caregivers what they need to know to provide safe self-care carries increased liability exposure for nurses (Murphy, 1991). The benefits reaped from close attention to patient-family teaching are speedier recovery and reduced potential for postoperative complications and ultimately results in functioning in a more efficient and cost-effective manner.

Preoperative Patient Selection and Preparation

Selecting the appropriate patient population for ambulatory surgery and administering conscious sedation by the RN are critical. With ambulatory surgery no longer limited to American Society of Anesthesiologists (ASA) physical status I or II patients undergoing superficial or minor procedures, the need for thorough pre-anesthetic screening has become more important. The ASA classification system shown in Table 4 is a widely used screening tool. Accurate patient classification will weed out patients with disease processes who are not candidates to be managed by RNs. The age range of the patient population being administered conscious sedation in a specific unit is important as the physical and psychological needs, medications and dosages, emergency measures, and staff training requirements differ between pediatric and adult patients. It is wise to consider the patient’s developmental level because disabled and psychologically immature patients may require deep sedation or general anesthesia for safety and compliance reasons (Somerson, Husted, & Sicilia, 1995).

Table 4.
American Society of Anesthesiology (ASA)
Classification System

| ASA-1  | Normal healthy patient |
| ASA-2  | Patient with mild systemic disease (mild diabetes, controlled hypertension, anemia, chronic bronchitis) |
| ASA-3  | Patient with severe systemic disease that limits activity but is not incapacitating, (angina, obstructive pulmonary disease, prior myocardial infarction) |
| ASA-4  | Patient with severe systemic disease that is a constant threat to life (heart failure, renal failure, acute myocardial infarction) |
| ASA-5  | Moribund patient not expected to survive 24 hours with or without the procedure (ruptured aneurysm, head trauma with increasing ICP, shock due to myocardial ischemia) |
| E      | Emergency |
A complete patient assessment includes a thorough review of the medical record with particular emphasis on the patient's diagnosis and past medical illnesses or prior surgical procedures. Previous uncomplicated procedures cannot be taken as a guarantee of a problem-free course. Specialty consultations should be reviewed for pre-procedure clearance as well as questioning for use of any over-the-counter medications such as aspirin and nonsteroidal anti-inflammatory agents. Prior anesthesia or conscious sedation records should also be reviewed for medications and dosages used, airway management, and drug reactions including latex products and any anesthetic complications.

Intraoperative Nursing Care, Sedation, and Monitoring

Establishing the patient's baseline physiologic and psychologic parameters are paramount prior to sedation. This initial data will be critical for comparisons throughout the intraoperative and recovery phases as the nurse evaluates the patient's status. Conscious sedation is the use of medication, resulting in amnesia and/or analgesia, to sufficiently blunt but not remove a patient's protective reflexes in order to allow the performance of a procedure or test (invasive or noninvasive). The patient should exhibit a minimally depressed level of consciousness while retaining the ability to independently and continuously maintain a patent airway and appropriately respond to physical stimulation and/or verbal command. Desired goals and undesirable effects are described in Table 5. Monitoring conscious sedation is not a lesser technique, nor is the recovery process. It often takes more skill to administer smooth and safe conscious sedation than a general anesthetic. Early detection of potential complications can decrease the likelihood of adverse outcomes (ASA, 1996). This can only be achieved by continuous monitoring of the patient's physiologic and psychologic status by a competent, dedicated professional. The frequency of recording monitoring parameters pre, intra, and postoperatively is an institutional decision which must be delineated in policies. Intraoperative intervals generally range between 5 and 15 minutes with progressively greater intervals as the patient progresses through the recovery process.

Table 5.
Conscious Sedation

<table>
<thead>
<tr>
<th>Desired Goals</th>
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<tbody>
<tr>
<td>Maintenance of consciousness</td>
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<tr>
<td>Alteration in mood</td>
</tr>
<tr>
<td>Relaxation</td>
</tr>
<tr>
<td>Cooperation</td>
</tr>
<tr>
<td>Elevation of pain threshold</td>
</tr>
<tr>
<td>Minimal variation of vital signs</td>
</tr>
<tr>
<td>Some degree of amnesia</td>
</tr>
<tr>
<td>Decreased verbal communication</td>
</tr>
<tr>
<td>Initiation of slurred speech</td>
</tr>
<tr>
<td>Arousable sleep, rapid safe return to baseline</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Undesirable Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of consciousness</td>
</tr>
<tr>
<td>Respiratory depression</td>
</tr>
<tr>
<td>Hypotension</td>
</tr>
<tr>
<td>Apnea</td>
</tr>
</tbody>
</table>

Sources: AORN, 1991, p. 105; Somerson et al., 1995, p. 28
Unarousable sleep
Severely slurred speech
Agitation
Combativeness

Sources: AORN, 1996, p. 206; Ringler, 1995, p. 638

The most important monitor is the person designated to do the monitoring. Monitoring is far more than simply placing electronic devices on a patient. It is continual patient assessment and correlating values generated by automatic devices with actual patient status. To facilitate precise documentation and standardization of care, predetermine and define terminology to describe the spectrum of consciousness (alert and awake, sedated and cooperative, asleep and easily arousable, asleep but slow to arouse to name, arousable only to pain, unarousable). Essential monitoring equipment is listed in Table 6 and documentation of monitoring data on a time-based record form is described in Table 7 (AORN, 1996; JCAHO, 1996).

Table 6.
Essential Monitoring Equipment

* Functional source of oxygen
* Positive-pressure ventilation (bag valve mask) delivering greater than 90% oxygen
* Suction equipment and appropriate-sized suction catheters
* Sufficient electrical outlets with clearly labeled emergency power supply outlets
* Adequate illumination with backup battery-powered equipment
* Emergency cart with equipment appropriate for the patient's age and size to include defibrillator, emergency drugs, airway equipment, and IV solutions and supplies
* Equipment to monitor cardiac rate and rhythm, blood pressure, pulse rate, respiratory rate, oxygen saturation percent (pulse oximetry)
* A reliable means of two-way communication to summon help

Table 7.
Monitoring Data Documentation

* Cardiac rate and rhythm
* Blood pressure, pulse rate, respiratory rate
* Oxygen delivery route such as nasal cannula or face mask and flow rate
* Oxygen saturation percent (\(Sa[O_2]\)).
* Level of consciousness
* Verbal response (if indicated)
* Medication administered, dosage, time, route, patient response, and name of the ordering
physician or anesthesia provider
* Type and amounts of IV fluids and blood components administered
* Any intervention and the patient's response
* Any significant events or untoward reactions and their resolution

Source: AORN, 1996, p. 208

Postoperative Recovery Care, Discharge, and Followup

Practical objective criteria, not time frames, should be implemented to ensure uniform safe recovery and discharge of patients to home (Chung, 1995). The Post Anesthetic Recovery Score (PAR) is an effective, reliable, and safe assessment and documentation tool; however, the original PAR only addressed the early phases of recovery. As noted in Table 8, recent modifications allow for determining street fitness and home readiness. Exceptions to the scoring guidelines do exist and patient variability must be taken into consideration. Patients sometimes look good "on paper" but final professional judgment is crucial to patient safety.

Table 8. Modified Post-Anesthetic Recovery (PAR) Score for Patients Having Anesthesia on Ambulatory Basis

<table>
<thead>
<tr>
<th>Activity</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Able to move 4 extremities voluntarily or on command</td>
<td>2</td>
</tr>
<tr>
<td>Able to move 2 extremities voluntarily or on command</td>
<td>1</td>
</tr>
<tr>
<td>Unable to move extremities voluntarily or on command</td>
<td>0</td>
</tr>
<tr>
<td>Able to breathe deeply and cough freely</td>
<td>2</td>
</tr>
<tr>
<td>Dyspnea, limited breathing or tachypnea</td>
<td>1</td>
</tr>
<tr>
<td>Apneic or on mechanical ventilator</td>
<td>0</td>
</tr>
<tr>
<td>BP plus or minus 20% of pre-anesthetic level</td>
<td>2</td>
</tr>
<tr>
<td>BP plus or minus 20%-49% of pre-anesthetic level</td>
<td>1</td>
</tr>
<tr>
<td>BP plus or minus 50% of pre-anesthetic level</td>
<td>0</td>
</tr>
<tr>
<td>Fully awake</td>
<td>2</td>
</tr>
<tr>
<td>Arousable on calling</td>
<td>1</td>
</tr>
<tr>
<td>Not responding</td>
<td>0</td>
</tr>
<tr>
<td>Able to maintain [O.sub.2] saturation &gt;92% on room air</td>
<td>2</td>
</tr>
<tr>
<td>Needs [O.sub.2] inhalation to maintain [O.sub.2] saturation &gt;90%</td>
<td>1</td>
</tr>
<tr>
<td>Dry and clean</td>
<td>2</td>
</tr>
</tbody>
</table>
Mild pain handled by oral medication 1  PAIN
Severe pain requiring parenteral medication 0

Able to stand up and walk straight(*) 2
Vertigo when erect 1  AMBULATION
Dizziness when supine 0

Able to drink fluids 2
Nauseated 1  FASTING-FEEDING
Nausea and vomiting 0

Has voided 2
Unable to void but comfortable 1  URINE OUTPUT
Unable to void and uncomfortable 0

(*) May be substituted by Romberg’s test, or picking up 12 clips in one hand.

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Barring conflict with state regulations or institutional policies, RNs can discharge patients. The medical staff should approve discharge criteria and an order placed in the patient’s medical record to discharge when criteria are met. Table 9 describes verbal and written discharge instructions that should be given to the patient and a responsible adult escort and/or caregiver and documented in the patient’s medical record. The patient should not be allowed to take public transportation such as buses, subways or taxis for their own safety (Holzman et al., 1994; JCAHO, 1996; Murphy, 1991). Once surgery is done and the patient is discharged, evaluation of the patient’s condition is ongoing until recovery and independence are achieved or chronic care is required. During postoperative followup telephone calls, nurses can evaluate progress, comfort level and general satisfaction, and provide reassurance and positive reinforcement. The end goal is to facilitate recovery in a safe, monitored manner, reduce patient and family anxiety, control health care costs, and facilitate return to the preoperative state of functioning (Redmond, 1995).

Table 9.
Patient and Caregiver Discharge Instructions

* Self-care of operative site(s)
* Activity level and limitations
* Symptoms to expect following procedure
* Symptoms that need to be brought to the health care professional’s attention
* Signs and symptoms of infection or bleeding
* Dietary restrictions
* Medication instructions
* Avoidance of operation of motor vehicles, electric equipment, or heavy equipment
* Alcohol consumption, tobacco, and making important decisions for 24 hours
* Followup care (time, place, and date)
* Phone number(s) for assistance in the event of
Outcome Measures

Traditionally, clinical outcomes have been measured by complication and infection rates but not how patients feel after surgery. Outcomes are not direct measures of quality; they only provide screens and warning flags. Outcomes are what actually happens to patients as a result of their interaction with the health care system. Measurable outcomes can be disease specific, general health, patient performance, or patient satisfaction. Disease-specific outcomes are related to physiologic signs and symptoms (joint pain in arthritis, frequency of headaches, sleep problems in depression, asthma attacks). General health outcomes are related to function or general well being (ability to work, mobility, self-image). Patient and family performance outcomes are related to patient understanding and compliance by action (demonstrating correct wound care, ability to self-administer medications). Patient satisfaction outcomes are related to amenities, the art of caring, and results, all of which are based on patient and family perception. Patient satisfaction can be evaluated in several areas such as outpatient services, admission procedures, the unit itself, quality of preoperative and postoperative information, postoperative pain relief, and postoperative management. Outcome monitoring includes the patient’s perspective on whether the surgery was successful. "Functional health" measures reveal how quickly patients return to work or other activities, and how their productivity is affected. Main sources of dissatisfaction tend to be waiting times, inadequacy of pain relief, and lack of preoperative and postoperative information (Benson, 1992).

Ambulatory surgery managers must begin monitoring the impact of surgery on patients' quality of life as outcome management continues to become more consumer oriented and used as a benchmarking and marketing tool. The joint Commission and the Accreditation Association for Ambulatory Health Care both plan to make performance measurement a part of their survey and accreditation processes for hospitals and freestanding ambulatory surgery centers. Consumer attitudes will continue to strongly influence the growth of ambulatory surgery.

REFERENCES


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