

Procedural Pain Management: A Position Statement with Clinical Practice Recommendations

■ ■ ■ *Michelle L. Czarnecki, MSN, RN-BC, CPNP,*
Helen N. Turner, DNP, RN-BC, PCNS-BC,†
Patricia Manda Collins, MSN, RN, AOCN,‡
Darcy Doellman, BSN, RN, CRNI,§
Sharon Wrona, MS, RN-BC, CPNP,||
and Janice Reynolds, RN-BC, OCN, CHPN¶*

■ ABSTRACT:

The American Society for Pain Management Nursing (ASPMN) has developed a position statement and clinical practice recommendations related to procedural preparation and comfort management. Procedures potentially produce pain and anxiety, both of which should be assessed and addressed before the procedure begins. This position statement refers to “comfort management” as incorporating the management of pain, anxiety, and any other discomforts that may occur with procedures. It is the position of ASPMN that nurses and other health care professionals advocate and intervene based on the needs of the patient, setting, and situation, to provide optimal comfort management before, during, and after procedures. Furthermore, ASPMN does not condone procedures being performed without the implementation of planned comfort assessment and management. In addition to outlining this position with supporting evidence, this paper reviews the ethical considerations regarding procedural comfort management and provides recommendations for nonpharmacologic and pharmacologic management during all phases of the procedure. An appendix provides a summary of this position statement and clinical practice recommendations.

© 2011 by the American Society for Pain Management Nursing

The American Society for Pain Management Nursing (ASPMN) believes individuals who undergo potentially painful procedures have a right to optimal pain management before, during, and after the procedure and should have a plan in place to address potential pain and anxiety before initiation of any procedure. The present position statement addresses the management of pain and the many other discomforts (e.g., anxiety, stress, fear) that patients experience related to

*From the *Jane B. Pettit Pain and Palliative Care Center; Children's Hospital of Wisconsin, Milwaukee, Wisconsin; †Pediatric Pain Management Center; Doernbecher Children's Hospital/Oregon Health and Science University, Portland, Oregon; ‡South Miami Hospital, Miami, Florida; §Cincinnati Children's Hospital, Cincinnati, Ohio; ||Comprehensive Pain Services, Nationwide Children's Hospital, Columbus, Ohio; ¶Mid Coast Hospital, Brunswick, Maine.*

Address correspondence to Michelle L. Czarnecki, MSN, RN-BC, CPNP, Jane B. Pettit Pain and Palliative Care Center; Children's Hospital of Wisconsin, P.O. Box 1997, MS 792, Milwaukee, Wisconsin 53201. E-mail: mczarnecki@cbw.org

*Received February 4, 2011;
Revised February 23, 2011;
Accepted February 24, 2011.*

*1524-9042/\$36.00
© 2011 by the American Society for Pain Management Nursing
doi:10.1016/j.pmn.2011.02.003*

procedures; therefore, the terms “pain management” and “comfort management” may be used interchangeably. All health care professionals (HCPs), including nurses, have a responsibility to advocate for optimal comfort and to intervene based on the situation and setting to protect the best interests of the patient.

BACKGROUND

Procedures, many of which produce pain, are common occurrences in health care today as a means of providing diagnostic information, treatment, or palliation. Any procedure causing actual or potential tissue damage has the potential to cause pain. Therefore, potentially painful procedures can range from “simple” procedures, such as venipunctures or dressing changes, to more invasive procedures, such as lumbar punctures, fracture reductions, or biopsies, and can occur in a variety of settings, from the hospital or same day surgery center to an ambulatory clinic, physician/dentist office, or home care environment. Regardless of the procedure or setting, if pain is not anticipated and prevented or treated appropriately, patients may experience numerous harmful effects and pain levels may be higher with subsequent procedures (Ducharme, 2000; Weisman, Bernstein, & Schecter, 1998). Yet studies continue to show that patients, regardless of age, gender, race, ethnicity, or socioeconomic status, often endure procedural pain that could potentially be minimized if not eliminated (American Association of Pediatrics/American Pain Society [AAP/APS], 2001).

The Pain Experience

Patients often report the pain associated with a procedure to be worse than the condition necessitating the procedure (Finley & Schecter, 2003). Although it may be influenced by the type of procedure (Rawe et al., 2009), pain is based on the perception of the patient, which may be influenced by a myriad of interrelated factors, including the patient’s emotional and psychologic state, level of anxiety, previous pain experience, understanding of the procedure (Marsac & Funk, 2008), and medical condition and environmental factors, including the setting and person performing the procedure. Although it seems logical that the skill of the person performing the procedure may affect the amount of distress experienced during the procedure, according to McNaughton, Zhou, Rober, Storrow, and Kennedy (2009), there is no evidence to support this view.

Studies have shown the individual pain response is influenced by age, gender, and culture. In a study of 412 adults undergoing wound care, younger patients had more pain before and after the procedure

than older patients, but no difference was found in pain intensity during the procedure (Stotts et al., 2004). Study results differ regarding the effect of gender on procedural pain perception. In one study assessing the incidence of pain during invasive procedures, Rawe et al. (2009) reported that women had higher pain scores before, during, and after procedures than men, but only those pain scores during the procedures were significantly higher. In contrast, Stotts et al. (2004) reported no difference in pain intensity between men and women having wound care.

Cultural influences may affect the manner in which one behaves while experiencing pain. It has been shown that individuals from different cultures and within cultures vary regarding the degree of pain reported (Walsh, Davidovitch, & Egol, 2010). If differences in pain occur in response to fracture pain, as described by Walsh et al., it would stand to reason that these differences may exist in response to procedural pain as well. Nonetheless, the characteristics of cultural groups are generalizations only; individual variables must be taken into account to avoid stereotyping people according to their cultural group (Brown & Bennett, 2010). Ethnicity may affect a patient’s response to pain, whether the patient reports pain, and to what degree. Stotts et al. (2004) found no difference in the amount of pain reported before or after wound care procedures based on ethnicity, but during the procedure, nonwhites reported greater pain than whites. Knowledge of the patient’s ethnicity and culture are important when developing a comfort management plan and assessing the pain response (Anderson, Green, & Payne, 2009; Lasch, 2000).

Harmful Effects of Pain

Pain can cause both immediate and long-term harmful effects that do not discriminate based on age, gender, race, ethnicity, or socioeconomic status. There are limited data regarding both the short-term and the long-term effects of procedural pain; however, it stands to reason that the effects of acute pain would apply to procedural pain. These effects consist of a variety of physical, emotional, behavioral, cognitive, and psychologic manifestations, including fear, anxiety, anger, aggressive behavior, inability to concentrate, embarrassment, refusal to consent to further procedures, and distrust of the health care team, and may effect overall economic, social, and spiritual well-being (Brennan, Carr, & Cousins, 2007; Ferrell, 2005; Gordon et al., 2005; Mertin, Sawatzky, Diehl-Jones, & Lee, 2007).

The immediate physical effects of pain are related to the stress response and affect a variety of body systems, including cardiopulmonary function, metabolic and inflammatory response (e.g., coagulation, hyperglycemia),

and immune competence, including wound healing and tumor growth (Mertin et al., 2007; Page, 2003; Page, 2005; Solowiej, Mason, & Upton, 2009). Psychosocial factors, such as fear and anxiety, are known to provoke the stress response (Mertin et al., 2007), and fear and anxiety are heightened when the occurrence of the painful experience is unpredictable. If the patient is prepared for the pain, adaptive responses will assist with attenuating the degree of fear and anxiety experienced (Oka et al., 2010). Long-term effects of pain include insomnia, depression, changes in appetite, and fatigue; severe pain can lead to prolonged hospitalization and poor clinical outcomes (Berenholtz, Dorman, Ngo, & Pronovost, 2002; Wu et al., 2005). Patients with dementia may be at higher risk for procedural pain during and after the procedure. They may have difficulty in interpreting the painful sensation in the context of the procedure. In addition, patients with moderate to severe dementia may not be able to verbally express their discomfort and advocate for themselves (Bjoro & Herr, 2008). Other than in newborns and young children, it is not known to what degree these long term effects occur in response to single or repeated exposure to procedural pain.

Newborns and young children are especially susceptible to the detrimental effects of pain (Mitchell & Boss, 2002). In infants, pain steals the energy that should be directed toward growth and development and disrupts sleep, feeding, and bonding (Mitchell & Boss, 2002). The long-term physical effects of pain are most pronounced in the preterm infant, because the developing nervous system is immature. Pain in those early days of life can cause structural and physiologic changes that can lead to lifelong abnormal responses to noxious and even nonnoxious stimuli causing a lowered pain threshold and central sensitization (Evans, Vogelpohl, Bourguignon, & Morcott, 1997; Grunau, Holsti, & Peters, 2006; Ruda, Ling, Hohmann, Peng, & Tachibana, 2000). In the sentinel study by Taddio, Katz, Ilersich, and Koren (1997), circumcised infants exhibited a stronger pain response to subsequent routine immunization than did those who were uncircumcised. Furthermore, cognitive and psychosocial development of preverbal children may be adversely affected by early painful experiences, despite the individual having no conscious memory of the event. These effects in response to pain are believed to occur because of the close proximity between the areas that process pain, emotion, and attention in the brain (Grunau et al., 2006).

Deficits in Procedural Pain Management

Neonates. Neonates, infants, young children, and critically ill patients are at higher risk for increased pain owing to their inability to communicate effectively

(Cignacco et al., 2007). Infants in neonatal intensive care units compose the age group most vulnerable to the harmful effects of pain, yet they are frequently subjected to painful procedures (American Academy of Pediatrics/Canadian Paediatric Society [AAP/CPS], 2006) for which comfort measures are rarely used (Baker & Rutter, 1995; Carbajal et al., 2008; Simons et al., 2003). Although studies support the use of comfort measures (d'Apolito, 2006), consistent application of these comfort measures for potentially painful procedures is far from universal (Bhargava & Young, 2007). In addition to the harmful effects of pain discussed above, of relevance to both clinicians and researchers is the finding that infants who experienced repeated heel lances during the first 24-36 hours of life learned to anticipate pain and showed hyperalgesia during subsequent venipuncture compared with infants who had not experienced previous heel lances (Taddio, Shah, Gilbert-MacLeod, & Katz, 2002). This finding adds substantial credence to the need for HCPs to prevent pain associated with procedures whenever possible. Neonates cannot advocate for themselves and are therefore a vulnerable population completely dependent on HCPs to prevent, recognize, and manage their pain (ASPMN, 2001).

Children. The benefits of interventions such as preparation, support during a procedure, and postprocedural follow-up to help children cope with the health care environment and invasive procedures have been well documented (Gaynard et al., 1998; Uman, Chambers, McGrath, & Kisely, 2006), and yet the use of comfort measures for procedural pain management in children is variable. In a pediatric emergency room setting, although some patients requiring procedures such as laceration repair or incision and drainage received topical anesthetic and some patients requiring fracture reduction received procedural sedation, few patients undergoing procedures such as venipuncture, intravenous catheter placement, finger stick lab draws, nasogastric tube placement, or urethral catheterization received any comfort measures (MacLean, Obispo, & Young, 2007). Similarly, in another study, Puntillo et al., (2001) found that although adolescents reported wound care to be the most painful procedure, <20% were premedicated with opioids for that procedure. Together, such results continue to demonstrate a need for more aggressive comfort management during procedures.

Adults. In a variety of health care settings, patients must endure routine activities such as turning or being moved from a bed to a chair or gurney. Often, HCPs do not think of such activities as "procedures" and therefore overlook the need to provide comfort measures. In a large comparative descriptive study known as the Thunder Project II, data were obtained from

6,201 patients (mean age 60.6 years) regarding the frequency of analgesic use and mean pain scores during turning, wound drain removal, tracheal suctioning, femoral catheter removal, central venous catheter placement, and nonburn wound dressing change (Puntillo et al., 2001, 2002). Results from these studies indicated that the most painful procedure for adults was turning, a task that HCPs often do not consider to be a procedure. Likewise, Stanik-Hutt, Soeken, Belcher, Fontaine, and Gift (2001) reported that trauma patients had higher pain scores during turning compared with resting, and the last dose of analgesic had been administered anywhere from 10 minutes to 10.5 hours earlier. In the same study, patients undergoing endotracheal tube suctioning (another common procedure for which patients are often not premedicated) reported pain scores as high as 4.9/10 with only 4/45 patients (8%) receiving an analgesic before the procedure. Stotts et al. (2004) also found <25% of patients received pharmacologic intervention before wound care (including packing, irrigation, debridement), even if pain was present before the procedure began. Cumulatively, such results indicate the amount of pain experienced cannot be predicted based upon the procedure itself or the presence or absence of pain before initiation of the procedure.

Barriers to Procedural Pain Management

Patient-specific factors influencing the adequacy of pain management include diagnosis, age, gender, race, ethnicity, cognitive level, literacy level, mental illness, history of chemical dependency, socioeconomic background, and the patient's ability to communicate (Brockopp et al., 2004; Green et al., 2003; Green, Todd, Lebovits, & Francis, 2006; Sullivan & Engel, 2005). Perhaps even more influential than these patient-specific factors is the lack of acknowledgement by HCPs that pain may occur during or after a procedure. Without this acknowledgement, the necessary anticipation, prevention, and management of potential or actual procedural pain cannot occur (AAP/APS, 2001; Ellis et al., 2002; Polkki, Pietila, & Vehvilainen-Julkunen, 2003; Puntillo et al., 2002; Stotts et al., 2004; Young, 2005). In one study, <25% of adult patients receiving wound care received pain medication (Stotts et al., 2004). In another study, nurses frequently waited until patients reported pain before administering analgesics (Twycross, 2002), and Puntillo et al. (2002) reported that patients who were experiencing pain before a procedure were more likely to receive analgesia during the procedure. These studies indicate a need for collaboration among health care team members to develop Policies and Procedures that hold HCPs accountable for proactively providing

pharmacologic and nonpharmacologic comfort measures to prevent or reduce pain rather than waiting for patients to report it. Studies have shown that often either organizations do not have guidelines in place to direct procedural comfort management (Harrison, Loughnan, & Johnston, 2005) or HCPs do not consistently follow them (Twycross, 2002; Walker & Wagner, 2003); both of these practices put patients at risk for suboptimal procedural comfort management.

Nurses have identified the following barriers to implementing procedural comfort management: unawareness of the existence of hospital guidelines or policies; HCPs not realizing there is a "better way" to perform procedures; poor communication between health care teams; lack of input from patients and families; underuse of topical anesthetics (Zemsky, 2008); lack of time (Gimble-Berglund, Ljusegren, & Enskar, 2008); insufficient medication orders available before a procedure, and insufficient time to administer medications before a procedure (Czarnecki et al., 2010). In addition, lack of consistency in patient care and lack of cooperation between HCPs were cited as examples of barriers to pain management in general, and may certainly effect procedural pain management as well (Gimble-Berglund et al., 2008).

Although interventions are described in the literature and may be available to prevent or substantially reduce potential pain, they often are not implemented (AAP/APS, 2001). Evidence-based guidelines are needed to support a universal understanding of the effects of poorly managed procedural comfort and the best practices for procedural comfort management. A cultural shift must occur at both an organizational level and a personal level, one in which all HCPs view every procedure as a potentially painful experience for the patient, not merely a task to be performed by the HCP (Reddy, Kohr, Queen, Keast, & Sibbald, 2003).

Approaches to Procedural Comfort Management

Developing an individualized plan for procedural comfort can enhance both psychosocial (e.g., coping, increased understanding of hospital procedures) and physical (e.g., walking, returning to regular diet, decreased opioid requirement) patient outcomes (Breiner, 2009; Gaynard et al., 1998). Such plans may include nonpharmacologic and/or pharmacologic interventions based on the patient's unique characteristics, care setting, procedure being performed, and skill of the HCP performing the procedure. An important principle to consider when developing a comfort plan is that in most cases, nonpharmacologic interventions should be used to supplement,

not to replace pharmacologic approaches when pain is expected (Cignacco et al., 2007). Individuals prescribing and administering pharmacologic agents must be knowledgeable about the onset, duration, and mechanism of action for these agents and be skilled in managing adverse effects and complications should they occur.

Pharmacologic Interventions. Pharmacologic interventions are the cornerstone of procedural pain and comfort management. Common pharmacologic agents for managing procedural comfort include local anesthetics, nonsteroidal antiinflammatory drugs (NSAIDs), acetaminophen, opioids, anxiolytics, and sedatives. Some particularly invasive and painful procedures may benefit from the use of regional (e.g., peripheral nerve block) or general anesthesia. Several factors should be considered when selecting appropriate pharmacologic agents for patients undergoing procedures, including the type and length of the procedure, how much pain is associated with the procedure, the setting in which the procedure will be performed, age of the patient, accessibility to pharmacologic agents and techniques, and availability of skilled personnel to administer and monitor the effects of the selected pharmacologic intervention(s) (Tobias & Deshpande, 2005).

Local Anesthetics. Local anesthetics are the most commonly used agents for dermal procedure pain management (Pasero, Polomano, Portenoy, & McCaffery, 2011). Typically, they are injected subcutaneously or intradermally or applied topically to the skin. Local anesthetics are administered via regional anesthetic techniques for more invasive painful procedures.

Topical preparations are available in cream, patch, and spray formulations. Topical anesthetics should be used for needle stick procedures whenever possible (Fetzer, 2002; Infusion Nurses Society [INS], 2006), particularly in infants and children (AAP/APS, 2001; Kolk, van Hoof, & Fiedeldij Dop, 2000). A drawback of topical preparations is that they all have an extended application time because they must transverse the skin barrier to reach the site of action. Application time varies from 30 to 120 minutes depending on the formulation and depth of anesthesia desired.

Injectable bacteriostatic saline or lidocaine using a small-gauge needle (e.g., ≥ 27) has been shown to be particularly effective for intravenous catheter insertion, suturing, biopsies, and other needlestick procedures (Brown, 2004; McNelis, 1998; McNaughton, Zhou, Robert, Storrow, & Kennedy, 2009; Moureau & Zonderman, 2000; Patterson, Hussa, Fedele, Vegh, & Hackman, 2000). Spanos et al. (2008) found needleless "injection" of 1% buffered lidocaine using the J-Tip (National Medical Products, Irvine, CA) to provide greater anesthesia than a 30-minute application of

topical lidocaine, based on the self-report of children aged 8-15 years undergoing peripheral intravenous catheter insertion. Such findings, if able to be generalized, offer an advantage to other options by eliminating the 30-minute wait time required for topical administration and the subcutaneous needle stick required for injectable anesthetics. Regardless of the local anesthetic formulation or technique of administration, care should be taken to allow the anesthetic to take effect before beginning the procedure.

Nonopioid Analgesics. The nonopioids, acetaminophen and NSAIDs, can be very beneficial when given in preparation for a procedure or for postprocedural pain. Acetaminophen alone may be effective for mild pain, and some NSAIDs (e.g., ketorolac or ibuprofen) alone may be effective alone for moderate pain. Both acetaminophen and an NSAID may be given together with other pharmacologic agents such as opioids, anxiolytics, and sedatives (Pasero, Portenoy, & McCaffery, 2011). NSAIDs can interfere with platelet aggregation which can enhance or prolong bleeding; this potential must be considered when determining the appropriateness of their administration (Pasero, Portenoy, & McCaffery, 2011).

Opioid Analgesics. Opioid analgesics are indicated when procedural pain is expected to be of a moderate to severe intensity (Pasero, Quinn, Portenoy, McCaffery, & Rizos, 2011). Opioids are available in a variety of fast-acting formulations, which can be used for short, painful procedures. The most commonly used are fentanyl, hydromorphone, and morphine, administered in titrated doses usually by the intravenous route for rapid analgesia (Pasero, Quinn, Portenoy, McCaffery, & Rizos, 2011). Although opioids are often used in conjunction with general anesthesia or procedural sedation, they should not be used alone or as a substitute agent when general anesthesia or procedural sedation is indicated (Dunlop, Deen, Lind, Voyle, & Prichard, 1999; Guenther et al., 2003; Park et al., 2008).

Procedural Sedation. Procedural sedation is used most often when procedures are expected to cause moderate to severe pain or to require extended periods of immobilization or the patient expresses great concern or distress at the thought of being awake during the procedure. Procedural sedation provides two benefits, sedation and amnesia; it does not provide analgesia. For some procedures, a mild anxiolytic before a procedure may induce amnesia and increase cooperativeness and willingness to undergo a similar procedure in the future, but an anxiolytic alone provides no reduction in pain. Likewise, sedatives do not relieve pain and should only be used in conjunction with an analgesic when pain is expected to be moderate to severe (Dunlop et al., 1999; Guenther

et al., 2003; Park et al., 2008). Procedural sedation must be performed only by HCPs experienced and knowledgeable with this technique and airway management (AAP, American Academy of Pediatric Dentistry, Cote, Wilson, & Workgroup on Sedation, 2006).

Nonpharmacologic Interventions. The strength of existing research on the use of nonpharmacologic interventions for procedural pain management is limited, and more rigorous clinical trials are needed (Bardia, Barton, Prokop, Bauer, & Moynihan, 2006; Klassen, Liang, Tjosvold, Klassen, & Hartling, 2008). More research is needed to understand factors that influence the variations seen in the choice and effectiveness of nonpharmacologic interventions among individuals, various patient populations, and care settings (Dahlquist & Pendley, 2005; Kortessluoma, Nikkonen, & Serlo, 2008).

Studies have shown nonpharmacologic interventions, used alone or in conjunction with pharmacologic interventions, have the potential to reduce the perception of pain associated with procedures (Friesner, Curry, & Moddeman, 2006; Windich-Biermeier, Sjoberg, Dale, Eshelman, & Guzzetta, 2007). Unfortunately, research demonstrates that these interventions are often “overlooked or underused” (Gatlin & Schulmeister, 2007, p. 699). Although much of the research regarding nonpharmacologic techniques has been performed in the pediatric population, there are studies showing the benefit of nonpharmacologic interventions to reduce pain across the age span (Cepeda, Carr, Lau, & Alvarez, 2006; Gatlin & Schulmeister, 2007; Jain & Mills, 2010; Nilsson, 2008).

Examples of nonpharmacologic interventions used in attempts to decrease pain, including procedural pain, include relaxation techniques, meditation, imagery, massage, thermal measures, positioning, play activities, and music (Albani, 2010; Allred, Byers, & Sole, 2010; Bardia et al., 2006; Demir & Khorshid, 2010; Gatlin & Schulmeister, 2007; Klassen, 2008; Kostandy et al., 2008; Windich-Biermeier et al., 2007). The nurse’s role in assisting patients with nonpharmacologic interventions for procedural pain is to evaluate the appropriateness of their use for the procedure, determine the patient’s willingness and readiness to use them, teach the patient how to use the available options, support and reinforce correct use before, during, and after the procedure, and evaluate and document the effectiveness of the activity (Friesner et al., 2006; Gatlin & Schulmeister, 2007). Additional interventions specifically for neonates include administration of oral sucrose, nonnutritive sucking, swaddling, facilitated tucking, skin-to-skin contact, breastfeeding, and reduction of external stimuli (Cignacco et al., 2007; Cong,

Ludington-Hoe, McCain, & Pingfu, 2009; Ludington-Hoe, Hosseini, Torowicz, 2005; Shah, Aliwalas, & Shah, 2006; Xiaomei, Ludington-Hoe, McCain, & Pingfu, 2009).

DEFINITIONS

“*Culture* is a system of shared understandings that shapes and, in turn, is shaped by experience. Culture provides meaning to a set of rules for behavior that are normative (what everyone should do) and pragmatic (how to do it)” (Caprio et al., 2008, p. 2566).

“*Ethnicity* is used to categorize on the basis of cultural characteristics such as shared language, ancestry, religious traditions, dietary preferences, and history. Although ethnic groups can share a range of phenotypic characteristics due to their shared ancestry, the term is typically used to highlight cultural and social characteristics instead of biological ones” (Caprio et al., 2008, p. 2566).

Health care professionals (HCPs): Persons qualified by education, license or certification to work in the health care field.

Optimal pain management: Evidence based, appropriate, safe, and effective (Turner, in press).

Procedural sedation: the delivery of sedating or dissociative medications to produce a state of depressed consciousness, with or without opioid analgesics. Procedural sedation should allow the patient to maintain continuous and independent ventilation without a loss of protective reflexes (Epstein, 2003).

“*Race* is traditionally used to categorize populations on the basis of shared biologic characteristics, such as genes, skin color, and other observable features” (Caprio et al., 2008, p. 2570).

POSITION STATEMENT

ASPMN holds the position that patients of all ages are entitled to optimal comfort management before, during, and after procedures and all that HCPs have a responsibility to advocate and intervene to support the best interests of the patient. This includes having a procedure temporarily stopped to provide additional comfort measures if it becomes apparent that the current plan is ineffective. A procedure should be considered a biopsychosocial experience *for the patient* rather than simply a task to be completed by the HCP, and consequently, the plan may require a multimodal pharmacologic and nonpharmacologic approach. In addition, ASPMN recommends that nurses collaborate with other members of the health care team to establish policies and procedures, outlining the expectations for procedural comfort management before, during, and after painful procedures. These policies and procedures

should address available pharmacologic agents and nonpharmacologic techniques, patient selection criteria for various comfort interventions, risks and benefits, assessment and monitoring during and after the procedure, and patient teaching. [Appendix A](#) provides a summary of this position statement and clinical practice recommendations.

ETHICAL CONSIDERATIONS

Pain relief has been declared a basic human right by the World Health Organization ([Green et al., 2006](#)) and “the unreasonable failure to treat pain is viewed as an unethical breach of human rights” ([Brennen et al., 2007](#), p. 217). Several ethical principles apply to procedural pain management, including beneficence, non-maleficence, justice, autonomy, fidelity, dignity, and veracity ([Brown & Bennett, 2010](#)).

To prevent or minimize pain is a fundamental principle in health care; all HCPs have a responsibility not to inflict pain and suffering ([Brennan et al., 2007](#)). Beneficence is the moral obligation to act for the benefit of another, i.e., in the case of pain management, to act in the best interest of the patient ([Brennen et al., 2007](#)). The principle of beneficence also requires all HCPs to manage pain and provide compassionate care and allows patients to expect all HCPs to act always in good faith ([Brennen et al., 2007](#)). The principle of nonmaleficence, the duty to do no harm, may be applicable as well, because pain, especially unrelieved pain, is harmful both physically and psychologically. HCPs are expected to practice fidelity (keeping one’s promise) and treat patients with dignity by respecting the patient as a unique and important person ([Brown & Bennett, 2010](#)).

Respect for autonomy involves acknowledging a person’s right to hold views, make choices, and take action based on each person’s individual values and beliefs ([Beauchamp & Childress, 2001](#)). Patients have the right to be given all the information (including risks [i.e., pain] and benefits of procedures) necessary to make an informed decision and have input into comfort management related to the procedure ([Brown & Bennett, 2010](#)). According to [Brennen et al. \(2007\)](#), autonomy also includes HCPs’ obligation to listen to a patient’s report of pain and to make reasonable efforts to provide pain relief.

Also important to procedural pain management is the ethical tenet of veracity or truth telling. If the patient is told that “this won’t hurt” or “acetaminophen will be adequate for any pain later,” there is potential to damage trust in one’s provider and possibly negate the opportunity for a procedure to be repeated. Finally, justice obliges nurses and other HCPs to provide the

same level of care to all patients experiencing procedures regardless of age, gender, cognition, race, ethnicity, religion, or socioeconomic status.

CLINICAL PRACTICE RECOMMENDATIONS

Philosophy

Procedures are to be considered biopsychosocial experiences for the patient rather than simply tasks to be completed by the HCP ([Reddy et al., 2003](#)). As such, maintaining patient comfort before, during, and after procedures by collaborating with the patient and family in the creation of an individualized cognitively and developmentally appropriate plan of care for comfort and coping should be a priority and should occur before the procedure begins. If the patient is likely to experience repeated procedures, optimal comfort management with the initial procedure is crucial, as is the development of a comfort management plan for subsequent procedures.

No one technique is always better than another; the appropriate choice depends on the individual patient, procedure, setting, and HCP performing the procedure (see [Appendix B](#) for a summary of general recommendations for nurses, prescribers, and health care organizations). In promoting a patient-centered approach to procedures, HCPs must recognize individual characteristics (e.g., physical condition, age, cognitive function, psychological state, coping style, social, familial, and cultural characteristics, spiritual support), as well as preference for and previous experience with the procedure and various pain management modalities ([Breiner, 2009](#)). HCPs must promote quality of life as defined by the patient by providing appropriate comfort management, know and use treatments that minimize pain and trauma, assess comfort periodically, and engage the patient in the treatment decisions and process ([Reddy et al., 2003](#)). Research suggests that the following interventions are appropriate (adapted with permission from [Children’s Hospital and Health System, \[CHHS\], 2008](#)).

Before the Procedure

See [Appendix C](#) for checklist format.

1. Establish a plan for managing patient comfort if the procedure is likely to produce pain or anxiety.
 - a. Select appropriate pharmacologic and nonpharmacologic interventions.
 - b. Establish a mutually agreed upon comfort goal with the patient and family if indicated (e.g., young children, cognitively impaired).

- c. Develop a plan to help the patient cope during the procedure (e.g., distraction, breathing, relaxation) (Breiner, 2009).
 - d. Consider procedural sedation if:
 - i. The procedure is believed to be significantly painful.
 - ii. Immobility of the patient is required for a longer period of time.
 - iii. The patient expresses great concern or distress at the thought of being awake during the procedure.
 - e. If procedural sedation is in the best interest of the patient but cannot be administered in the current setting, consider transfer to an alternate location where the administration of procedural sedation is possible.
2. Prepare:
- a. Patient and family:
 - i. Provide education tailored to meet the patient and family needs (e.g., discussion, written materials, videos, etc.).
 - ii. Acknowledge patient's fears/concerns and modify the comfort management plan accordingly.
 - iii. A family member should be allowed to remain with the patient during procedures (if possible) when the patient believes this would be helpful (American Association of Critical Care Nurses, 2004).
 - (1) Provide coaching to family members regarding their role.
 - (2) If a family member is to be present, their role is to support the patient, not participate in or interfere with the procedure.
 - (3) The family member should be allowed to step away if needed.
 - b. Timing and location of procedure:
 - i. Negotiate the time and location of the procedure with patient/family and HCPs.
 - ii. Consider the following in choosing the location:
 - (1) Adequate space.
 - (2) Maximum privacy.
 - (3) Adjustable lighting.
 - (4) Minimal noise and interruptions.
 - (5) Accessibility to pharmacologic agents.
 - (6) Availability of supplies for nonpharmacologic techniques.
 - (7) Selection of music for relaxation if appropriate.
 - iii. Agree upon optimal patient position.
For children, studies have shown that supportive or comfort positioning can result in secure holds, close physical contact with a caregiver, and positive participation by the caregiver rather than negative restraining, promotion of a sense of control for the child, successful immobilization of the extremity when necessary, and reduced the number of staff needed to assist with the procedure (Stephens, Barkey, & Hall, 1999).
 - c. Prepare relaxation, distraction, and coping techniques based on patient preference, capabilities, and experience.
 - d. Decide how the patient will communicate unrelied pain or anxiety to the nurse during the procedure.
 - e. Discuss the need for any premedication with the health care team:
 - i. Analgesic if pain is anticipated.
 - ii. Topical anesthetics if indicated.
 - iii. Anxiolytic if anxiety is present/anticipated.
 - iv. Sedation if patient is required to be immobilized for long periods of time or if significant pain is expected.
 - v. Appropriate monitoring devices as needed.
Note: Optimal management of procedures is always desired; however, if the patient will need repeated procedures, it is crucial. It is advisable to provide maximum safe treatment for pain and anxiety during the first procedure to minimize the development of anticipatory anxiety before subsequent procedures.
 - f. Ensure that medications are ordered, available, and administered to allow sufficient time for effectiveness before the procedure.
 - g. Prepare the health care team:
 - i. Know the procedure specifics:
 - (1) What will be done.
 - (2) How long it is anticipated to take.
 - (3) What kind of pain is anticipated.
 - ii. Gather appropriate supplies and equipment.
 - iii. Know if additional support staff are needed and their role.
 - iv. Identify someone to lead the distraction and coping techniques so the patient is not confused or over stimulated (if multiple staff are present).
 - v. Know how the patient and family member think the patient will respond.
 - vi. Know how often the procedure will need to be repeated.

During the Procedure

1. Use agreed-upon distraction/coping techniques.
2. Assess pain and anxiety (if patient is awake).
3. If pain and/or anxiety are not well controlled during the procedure, ask the HCP performing the procedure to stop so that further evaluation can be conducted and the need for additional support (pharmacologic and/or nonpharmacologic) determined.
 - a. Signs that the procedure may not be progressing as expected include but are not limited to:
 - i. Needing to restrain the patient as opposed to supporting the patient.
 - ii. Raised volume of voices, strained voices.

- iii. Multiple people trying to lead, confusion.
- iv. A patient who is moaning, crying, or striking out.
 - v. An upset family member.
 - vi. A feeling the need to “get it over with” instead of calmly performing the procedure.
- 4. Remember to remain calm and confident, do not rush. Respectfully remind others to do the same as needed.
- 5. Provide verbal coaching in a calm reassuring manner.
 - a. Evaluate if other interventions (pharmacologic or nonpharmacologic) are required before continuing.
- 6. Monitor family member and staff behavior and provide feedback to ensure that the environment remains safe and relaxed for the patient.
- 7. Use supplies known to minimize tissue trauma as appropriate (Reddy et al., 2003).

After the Procedure

1. Discuss/evaluate the procedure with patient and family if applicable.
2. Document the procedure, including an evaluation of the patient's experience, from the patient, family, and HCP perspectives including recommendations for future procedures in the medical record.
3. Develop and implement a comfort management plan for after the procedure, because the pain resulting from the procedure itself may not subside when the procedure is completed and must be treated appropriately.
 - a. Multimodal (pharmacologic including opioids and adjuvants, and non pharmacologic) treatment may be indicated.
 - b. The comfort plan should include care in the event the patient is no longer in the health care setting (i.e., home) after the procedure.

SUMMARY

To prevent the detrimental effects of pain across the life span and provide optimal pain management, including procedural pain management, is critical. Research clearly shows that patients continue to suffer from procedural pain. Sufficient evidence exists supporting the use of nonpharmacologic and pharmacologic interventions to accomplish this goal; HCPs have an ethical obligation to use this evidence to provide the best and safest care possible when participating in procedures. Although in some situations it may not be possible to completely eliminate pain, interventions before, during, and after procedures can reduce the amount and intensity of procedural pain; HCPs should collaborate to develop Policies and Procedures outlining expectations for comfort management surrounding procedures. ASPMN supports HCPs advocating and intervening to the best of their ability, including having a procedure temporarily stopped to provide additional comfort measures, based on the situation, setting, and best interests of the patient to promote optimal and safe comfort management during procedures. Refer to [Appendix A](#) for a summary of this position statement and clinical practice recommendations.

Acknowledgments

The authors would like to thank the following ASPMN members for their expertise and critical review of this manuscript: Pat Bruckenthal, PhD, APRN-BC, ANP; Mary L. Heye, PhD, RN, ACNS-BC, RN-BC; Claudette Jacobs, DNP, RN-BC; Renee Manworren, PhD, RN-BC, CNS; and Chris Pasero, MS, RN-BC, FAAN.

REFERENCES

- Albani, F. (2010). The effect of programmed distraction on the pain caused by venipuncture among adolescents on hemodialysis. *Pain Management Nursing, 11*(2), 85-91.
- Allred, K. D., Byers, J. F., & Sole, M. L. (2010). The effect of music on postoperative pain and anxiety. *Pain Management Nursing, 11*(1), 15-25.
- American Association of Critical Care Nurses (2004). Practice alert: Family presence during CPR and invasive procedures. *AACN News, 21*(11). Retrieved September 8, 2010, from www.aacn.org.
- American Academy of Pediatrics /American Pain Society [APP/APS] (2001). The assessment and management of acute pain in infants, children, and adolescents. *Pediatrics, 108*(3), 793-797.
- American Academy of Pediatrics/Canadian Paediatric Society Policy Statement [AAP/CPS] (2006). Prevention and management of pain in the neonate: An update. *Pediatrics, 118*(5), 2231-2241.
- American Academy of Pediatrics [AAP], American Academy of Pediatric Dentistry, Cote, C. J., Wilson, S., & Workgroup on Sedation (2006). Guidelines for monitoring and management of pediatric patients during and after sedation for diagnostic and therapeutic procedures: An update. *Pediatrics, 118*(6), 2587-2602.
- American Society for Pain Management Nursing [ASPMN] (2001). *ASPMN position statement. Neonatal circumcision pain relief*. Lenexa, KS: ASPMN. Retrieved May 2010, from aspmn.org.
- Anderson, K. O., Green, C. R., & Payne, R. (2009). Racial and ethnic disparities in pain: Causes and consequences of unequal care. *The Journal of Pain, 10*(12), 1187-1204.
- Baker, D., & Rutter, N. (1995). Exposure to invasive procedures in neonatal intensive care unit admissions. *Archives of Disease in Childhood Fetal & Neonatal Edition, 72*(1), F47-F48.

- Bardia, A., Barton, D. I., Prokop, L. J., Bauer, B. A., & Moynihan, T. J. (2006). Efficacy of complementary and alternative medicine therapies in relieving cancer pain: A systematic review. *Journal of Clinical Oncology*, *24*, 5457–5464.
- Beauchamp, T. L., & Childress, J. F. (2001). Respect for autonomy. In: *Principles of Biomedical Ethics*, (5th ed.) (pp. 57–103) New York: Oxford University Press.
- Berenholtz, S. M., Dorman, T., Ngo, K., & Pronovost, P. J. (2002). Qualitative review of intensive care unit quality indicators. *Journal of Critical Care*, *17*, 1–12.
- Bhargava, R., & Young, K. D. (2007). Procedural pain management patterns in academic pediatric emergency departments. *Academic Emergency Medicine*, *14*(5), 479–482.
- Bjoro, K., & Herr, K. (2008). Assessment of pain in the nonverbal or cognitively impaired older adult. *Clinics of Geriatric Medicine*, *24*(2), 237–262.
- Breiner, S. M. (2009). Preparation of the pediatric patient for invasive procedures. *Journal of Infusion Nursing*, *32*(5), 252–256.
- Brennan, F., Carr, D., & Cousins, M. (2007). Pain management: A fundamental human right. *Anesthesia & Analgesia*, *105*(1), 205–221.
- Brockopp, D. Y., Downey, E., Powers, P., Vanderveer, B., Warden, S., Ryan, P., et al. (2004). Nurses' clinical decision-making regarding the management of pain. *International Journal of Nursing Studies*, *41*, 631–636.
- Brown, D. (2004). Local anesthesia for vein cannulation. *Journal of Infusion Nursing*, *27*(2), 85–88.
- Brown, M., & Bennett, P. (2010). Social, political, and ethical forces influencing nursing practice. In B. St. Marie (Ed.), *Core Curriculum for Pain Management Nursing*, (2nd ed.) (pp. 181–213) Dubuque, IA: Kendall Hunt.
- Caprio, S., Daniels, S. R., Drewnowski, A., Kaufman, F. R., Palinkas, L. A., Rosenbloom, A. L., & Schwimmer, J. B. (2008). Influence of race, ethnicity, and culture on childhood obesity: IMPLICATIONS for prevention and treatment. *Obesity*, *16*(12), 2566–2577.
- Carbajal, R., Rousset, A., Danan, C., Coquery, S., Nolent, P., Ducrocq, S., et al. (2008). Epidemiology and treatment of painful procedures in neonates in intensive care units. *Journal of the American Medical Association*, *300*(1), 60–70.
- Cepeda, M. S., Carr, D. B., Lau, J., & Alvarez, H. (2006). Music for pain relief. *Cochrane Database of Systematic Reviews*(2). CD004843.
- Children's Hospital and Health System (2008). Patient care policy and procedure: Procedures—Patient preparation and assessment for procedures and treatments conducted outside the operating rooms and special procedures rooms. Milwaukee, WI.
- Cignacco, E., Hamers, J. P. H., Stoffel, L., van Lingen, R. A., Gessler, P., McDougall, J., et al. (2007). The efficacy of non-pharmacologic interventions in the management of procedural pain in preterm and term neonates: A systematic literature review. *European Journal of Pain*, *11*(2), 139–152.
- Cong, X., Ludington-Hoe, S. M., McCain, G., & Pingfu, F. (2009). Kangaroo care modifies preterm infant heart rate variability in response to heel stick pain: Pilot study. *Early Human Development*, *85*, 561–567.
- Czarnecki, M.L., Simons, K., Thompson, J.J., Armus, C.L., Hanson, T.C., Berg, K.A., et al. (2010). Barriers to pediatric pain management: A nursing perspective. *Pain Management Nursing*.
- Dahlquist, L. M., & Pendley, J. S. (2005). When distraction fails: Parental anxiety and children's responses to distraction during cancer procedures. *Journal of Pediatric Psychology*, *30*(7), 623–628.
- d'Apolito, K. C. (2006). State of the science procedural pain management in the neonate. *Journal of Perinatal & Neonatal Nursing*, *20*(1), 56–61.
- Demir, Y., & Khorshid, L. (2010). The effect of cold application in combination with standard analgesic administration on pain and anxiety during chest tube removal: A single-blinded, randomized, double-controlled study. *Pain Management Nursing*, *11*(3), 186–196.
- Ducharme, J. (2000). Acute pain and pain control: State of the art. *Annals of Emergency Medicine*, *35*(6), 592–603.
- Dunlop, T. J., Deen, C., Lind, S., Voyle, R. J., & Prichard, J. G. (1999). Use of combined oral narcotic and benzodiazepine for control of pain associated with bone marrow examination. *Southern Medical Journal*, *92*(5), 477–480.
- Ellis, J. A., O'Connor, B. V., Cappeli, M., Goodman, J. T., Blouin, R., & Reid, C. W. (2002). Pain in hospitalized pediatric patients, how are we doing? *The Clinical Journal of Pain*, *18*(4), 262–269.
- Epstein, B. (2003). The American Society of Anesthesiologist's efforts in developing guidelines for sedation and analgesia for nonanesthesiologists: The 40th Rovenstine Lecture. *Anesthesiology*, *98*(5), 1261–1268.
- Evans, J. C., Vogelpohl, D. G., Bourguignon, C. M., & Morcott, C. S. (1997). Pain behaviors in LBW infants accompany some "nonpainful" caregiving procedures. *Neonatal Network—Journal of Neonatal Nursing*, *16*(3), 33–40.
- Ferrell, B. (2005). Ethical perspectives on pain and suffering. *Pain Management Nursing*, *6*(3), 83–90.
- Fetzer, S. J. (2002). Reducing venipuncture and intravenous insertion pain with eutectic mixture of local anesthesia: A meta-analysis. *Nursing Research* *51* 119–124.
- Finley, G. A., & Schechter, N. L. (2003). Sedation. In N. L. Schechter, C. B. Berde, & M. Yaster (Eds.), *Pain in infants, children, and adolescents*, (2nd ed.) (pp. 563–577) Philadelphia: Lippincott Williams & Wilkins.
- Friesner, S. A., Curry, D. M., & Moddeman, G. R. (2006). Comparison of two pain-management strategies during chest tube removal: Relaxation exercise with opioids and opioids alone. *Heart Lung*, *35*, 269–276.
- Gatlin, C., & Schulmeister, L. (2007). When medication is not enough: Nonpharmacologic management of pain. *Clinical Journal of Oncology Nursing*, *11*(5), 699–704.
- Gaynard, L., Wolfer, J., Goldberger, J., Thompson, R. H., Redburn, L., & Laidley, L. (1998). *Psychosocial Care of Children in Hospitals: A Clinical Practice Manual from the ACCH Child Life Research Project*. Rockville, MD: Child Life Council.
- Gimble-Berglund, I., Ljusegren, G., & Enskar, K. (2008). Factors influencing pain management in children. *Pediatric Nursing*, *20*(10), 21–24.
- Gordon, D. B., Dahl, J. L., Miaskowski, C., McCarberg, B., Todd, K. H., Paice, J. A., et al. (2005). American Pain Society recommendations for improving the quality of acute and cancer pain management. *Archives of Internal Medicine*, *165*(14), 1574–1580.
- Green, C. R., Anderson, K. O., Baker, T. A., Campbell, L. C., Decker, S., Fillingim, R. B., et al. (2003). The unequal burden

of pain: Confronting racial and ethnic disparities in pain. *Pain Medicine*, 4(3), 277–294.

Green, C. R., Todd, K. H., Lebovits, A., & Francis, M. (2006). Disparities in pain: Ethical issues. *Pain Medicine*, 7(6), 530–533.

Grunau, R. E., Holsti, L., & Peters, J. W. (2006). Long-term consequences of pain in human neonates. (Review). *Seminars in Fetal & Neonatal Medicine*, 11(4), 268–275.

Guenther, E., Pribble, C. G., Junkins, E. P., Kadish, H. A., Bassett, K. E., & Nelson, D. S. (2003). Propofol sedation by emergency physicians for elective pediatric outpatient procedures. *Annals of Emergency Medicine*, 42(6), 783–791.

Harrison, D., Loughnan, P., & Johnston, L. (2005). Pain assessment and procedural pain management practices in neonatal units in Australia. *Journal of Pediatrics and Child Health*, 42(1-2), 6–9.

Infusion Nurses Society (2006). Infusion nursing standards of practice. *Journal of Infusion Nurses*, 29(1S), S1–S92.

Jain, S., & Mills, P. J. (2010). Biofield therapies: Helpful or full of hype? A best evidence synthesis. *International Journal of Behavioral Medicine*, 17(1), 1–16.

Klassen, J. A., Liang, Y., Tjosvold, L., Klassen, R. P., & Hartling, L. (2008). Music for pain and anxiety in children undergoing medical procedures: A systematic review of randomized controlled trials. *Ambulatory Pediatrics*, 8(2), 117–128.

Kolk, A. M., van Hoof, R., & Fiedeldij Dop, M. J. (2000). Preparing children for venipuncture: The effect of an integrated intervention on distress before and during venipuncture. *Child Care Health Development*, 26(3), 251–260.

Kortesluoma, R. L., Nikkonen, M., & Serlo, W. (2008). "You just have to make the pain go away"—Children's experiences of pain management. *Pain Management Nursing*, 9(4), 143–149.

Kostandy, R. R., Ludington-Hoe, S. M., Cong, X., Abouelfetoh, A., Bronson, C., Stankus, A., & Jarrell, J. R. (2008). Kangaroo care (skin contact) reduces crying response to pain in preterm neonates: Pilot results. *Pain Management Nursing*, 9(2), 55–65.

Lasch, K. E. (2000). Culture, pain, and culturally sensitive pain care. *Pain Management Nursing*, 1(3 Suppl 1), 16–22.

Ludington-Hoe, S. M., Hosseini, R., & Torowicz, D. L. (2005). Skin to skin contact (kangaroo care) analgesia for preterm infant heel stick. *AACN Clinical Issues*, 16(3), 373–387.

MacLean, S., Obispo, J., & Young, K. D. (2007). The gap between pediatric emergency department procedural pain management treatments available and actual practice. *Pediatric Emergency Care*, 23(2), 87–93.

Marsac, M. L., & Funk, J. B. (2008). Relationships among psychological functioning, dental anxiety, pain perception, and coping in children and adolescents. *Journal of Dentistry for Children*, 75(3), 243–251.

McNaughton, C., Zhou, C., Robert, L., Storrow, A., & Kennedy, R. (2009). A randomized, crossover comparison of injected buffered lidocaine, lidocaine cream, and no analgesia for peripheral intravenous cannula insertion. *Annals of Emergency Medicine*, 54(2), 214–220.

McNelis, K. A. (1998). Intradermal bacteriostatic 0.9% sodium chloride containing the preservative benzyl alcohol compared with intradermal lidocaine hydrochloride 1% for attenuation of intravenous cannulation pain. *AANA Journal*, 66(6), 583–585.

Mertin, S., Sawatzky, J. V., Diehl-Jones, W. L., & Lee, T. W. R. (2007). Roadblock to recovery: The surgical stress response. *Dynamics—Official Journal of the Canadian Association of Critical Care Nursing*, 18(1), 14–20.

Mitchell, A., & Boss, B. J. (2002). Adverse effects of pain on the nervous systems of newborns and young children: A review of the literature. *Journal of Neuroscience Nursing*, 34(5), 228–236.

Moureau, N., & Zonderman, A. (2000). Does it always have to hurt?: Premedications for adults and children for use with intravenous therapy. *Journal of IV Nursing*, 23(4), 213–219.

Nilsson, U. (2008). The anxiety- and pain-reducing effects of music interventions: A systematic review. *AORN Journal*, 87(4), 780–807.

Oka, S., Chapman, C. R., Kim, B., Shimizu, O., Noma, N., Takeichi, O., et al. (2010). Predictability of painful stimulation modulates subjective and physiological responses. *The Journal of Pain*, 11(3), 239–246.

Page, G. G. (2005). Surgery-induced immunosuppression and postoperative pain management. *AACN Clinical Issues*, 16(3), 302–309.

Page, G. G. (2003). The immune-suppressive effects of pain. (Review). *Advances in Experimental Medicine & Biology*, 521, 117–125.

Park, S. H., Bang, S. M., Nam, E., Cho, E. K., Shin, D. B., Lees, J. H., et al. (2008). A randomized double-blind placebo-controlled study of low-dose intravenous lorazepam to reduce procedural pain during bone marrow aspiration and biopsy. *Pain Medicine*, 9(2), 249–252.

Pasero, C., Portenoy, R. K., & McCaffery, M. (2011). Non-opioid analgesics. In C. Pasero, & M. McCaffery (Eds.), *Pain Assessment and Pharmacologic Management*, (2nd ed.) (pp. 177–276) St. Louis: Mosby Elsevier.

Pasero, C., Quinn, T. E., Portenoy, R. K., McCaffery, M., & Rizos, A. (2011). Opioid analgesics. In C. Pasero, & M. McCaffery (Eds.), *Pain Assessment and Pharmacologic Management*, (2nd ed.) (pp. 277–622) St. Louis: Mosby Elsevier.

Pasero, C., Polomano, R. C., Portenoy, R. K., & McCaffery, M. (2011). Adjuvant analgesics. In C. Pasero, & M. McCaffery (Eds.), *Pain Assessment and Pharmacologic Management*, (2nd ed.) (pp. 623–818) St. Louis: Mosby Elsevier.

Patterson, P., Husa, A. A., Fedele, K. A., Vegh, G. L., & Hackman, C. M. (2000). Comparison of 4 analgesic agents for venipuncture. *AANA Journal*, 68(1), 43–51.

Polkki, T., Pietila, A. M., & Vehvilainen-Julkunen, K. (2003). Hospitalized children's descriptions of their experience with postsurgical pain relieving methods. *International Journal of Nursing Studies*, 40, 33–44.

Puntillo, K. A., White, C., Morris, A. B., Perdue, S. T., Stanik-Hutt, J., Thompson, C. L., et al. (2001). Patients' perceptions and responses to procedural pain: Results from Thunder Project II. *American Journal of Critical Care*, 10(4), 238–251.

Puntillo, K. A., Wild, L. R., Morris, A. B., Stanik-Hutt, J., Thompson, C. L., & White, C. (2002). Practices and predictors of analgesic interventions for adults undergoing painful procedures. *American Journal of Critical Care*, 11(5), 415–431.

Rawe, C., Trame, C., Moddeman, G., O'Malley, P., Biteman, K., Dalton, T., et al. (2009). Management of procedural pain: Empowering nurses to care for patients through clinical nurse specialist consultation and intervention. *Clinical Nurse Specialist*, 23(3), 131–137.

- Reddy, M., Kohr, R., Queen, D., Keast, D., & Sibbald, R. G. (2003). Practical treatment of wound pain and trauma: A patient centered approach. An overview. *Ostomy Wound Management*, 49(4A Suppl), 2-15.
- Ruda, M. A., Ling, Q. D., Hohmann, A. G., Peng, Y. B., & Tachibana, T. (2000). Altered nociceptive neuronal circuits after neonatal peripheral inflammation. *Science*, 289, 628-631.
- Shah, P. S., Aliwalas, L. L., & Shah, V. S. (2006). Breast-feeding or breast milk for procedural pain in neonates. *Cochrane Database of Systematic Reviews*(3). CD004950.
- Simons, S. H., van Dijk, M., Anand, K. S., Roofthoof, D., & van Lingen, R. A. (2003). Do we still hurt newborn babies? A prospective study of procedural pain and analgesia in neonates. *Archives of Pediatric and Adolescent Medicine*, 157(11), 1058-1064.
- Solowiej, K., Mason, V., & Upton, D. (2009). Review of the relationship between stress and wound healing: Part 1. *Journal of Wound Care*, 18(9), 357-366.
- Spanos, S., Booth, R., Koenig, H., Sikes, K., Gracely, E., & Kim, I. K. (2008). Jet injection of 1% buffered lidocaine versus topical ELA-Max for anesthesia before peripheral intravenous catheterization in children: A randomized controlled trial. *Pediatric Emergency Care*, 24(8), 511-515.
- Stanik-Hutt, J. A., Soeken, K. L., Belcher, A. E., Fontaine, D. K., & Gift, A. D. (2001). Pain experiences of traumatically injured patients in a critical care setting. *American Journal of Critical Care*, 10(4), 252-259.
- Stephens, B. K., Barkey, M. E., & Hall, H. R. (1999). Techniques to comfort children during stressful procedures. *Advances in Mind-Body Medicine*, 15(1), 49-60.
- Stotts, N. A., Puntillo, K., Morris, A. B., Stanik-Hutt, J., Thompson, C. L., White, C., et al. (2004). Wound care in hospitalized adult patients. *Heart & Lung*, 33(5), 321-332.
- Sullivan, L. W., & Eigel, B. A. (2005). Leveling the playing field: Recognizing and rectifying disparities in management of pain. *Pain Medicine*, 6(1), 5-10.
- Taddio, A., Katz, J., Ilersich, A. L., & Koren, G. (1997). Effect of neonatal circumcision on pain response during subsequent routine vaccination. *Lancet*, 349, 599-603.
- Taddio, A., Shah, V., Gilbert-MacLeod, C., & Katz, J. (2002). Conditioning and hyperalgesia in newborns exposed to repeated heel lances. *Journal of the American Medical Association*, 288(7), 857-861.
- Tobias, J. D., & Deshpande, J. K. (Eds.). (2005). *Pediatric Pain Management for Primary Care*, (2nd ed.) (pp. 183-228) Elk Grove Village, IL: American Academy of Pediatrics.
- Turner, H. N. (in press). Evaluating the effect of a pain resource nurse program on barriers to pediatric pain management.
- Twycross, A. (2002). Managing pain in children: An observational study. *Journal of Research in Nursing*, 7(3), 164-178.
- Uman, L. S., Chambers, C. T., McGrath, P. J., & Kisely, S. R. (2006). Psychological interventions for needle-related procedural pain and distress in children and adolescents. *Cochrane Database of Systematic Reviews*(4). CD005179.
- Walker, P. C., & Wagner, D. S. (2003). Treatment of pain in pediatric patients. *Journal of Pharmacy Practice*, 16, 261-275.
- Walsh, M., Davidovitch, R. I., & Egol, K. A. (2010). Ethnic disparities in recovery following distal radial fracture. *Journal of Bone and Joint Surgery—American Volume*, 92(5), 1082-1087.
- Weisman, S. J., Berstein, B., & Schecter, N. L. (1998). Consequences of inadequate analgesia during painful procedures in children. *Archives of Pediatrics & Adolescent Medicine*, 152(2), 147-149.
- Windich-Biermeier, A., Sjoberg, I., Dale, J. C., Eshelman, D., & Guzzetta, C. E. (2007). Effects of distraction on pain, fear and distress during venous port access and venipuncture in children and adolescents with cancer. *Journal of Pediatric Oncology Nursing*, 24(1), 8-19.
- Wu, C. L., Rowlingson, A. J., Partin, A. W., Kalish, M. A., Courpas, G. E., Walsh, P. C., et al. (2005). Correlation of postoperative pain to quality of recovery in the immediate postoperative period. *Regional Anesthesia & Pain Medicine*, 30(6), 516-522.
- Xiaomei, C., Ludington-Hoe, S. M., McCain, G., & Pingfu, F. (2009). Kangaroo care modifies preterm infant heart rate variability in response to heel stick pain: Pilot study. *Early Human Development*, 85, 561-567.
- Young, K. D. (2005). Pediatric procedural pain. *Annals of Emergency Medicine*, 45(2), 160-171.
- Zemsky, W. T. (2008). Optimizing the management of peripheral venous access pain in children: Evidence, impact and implementation. *Pediatrics*, 122(Suppl 3), S121-S124.

APPENDIX A: SUMMARY: POSITION STATEMENT WITH CLINICAL PRACTICE RECOMMENDATIONS

Abstract

The American Society for Pain Management Nursing (ASPMN) has developed a position statement and clinical practice recommendations related to procedural preparation and comfort management. Procedures potentially produce pain and anxiety, both of which should be assessed and addressed before the procedure begins. This position statement refers to “comfort management” as incorporating the management of pain, anxiety, and any other discomforts that may occur with procedures. It is the position of ASPMN that nurses and other health care professionals (HCPs) advocate and intervene based on the needs of the patient, setting, and situation to provide optimal comfort management before, during, and after procedures. Furthermore, ASPMN does not condone procedures being performed without the implementation of planned comfort assessment and management. In addition to outlining this position with supporting evidence, this paper reviews the ethical considerations regarding procedural comfort management and provides recommendations for nonpharmacologic and pharmacologic management during all phases of the procedure.

Background

Procedures, many of which produce pain, are common occurrences in health care today as a means of providing diagnostic information, treatment, or palliation. Any procedure causing actual or potential tissue damage has the potential to cause pain. Therefore, potentially painful procedures can range from “simple” procedures, such as venipunctures or dressing changes, to more invasive procedures, such as lumbar punctures, fracture reductions, or biopsies, and can occur in a variety of settings, from a hospital or same-day surgery center to an ambulatory clinic, physician/dentist office, or home care environment. Regardless of the procedure or setting, if pain is not anticipated and prevented or treated appropriately, patients may experience numerous harmful effects and pain levels may be higher with subsequent procedures (Ducharme, 2000; Weisman, Bernstein, & Schechter, 1998). Yet studies continue to show that patients, regardless of age, gender, race, ethnicity, or socioeconomic status, often endure procedural pain that could potentially be minimized, if not eliminated (American Association of Pediatrics/American Pain Society [AAP/APS], 2001).

Position Statement

ASPMN holds the position that patients of all ages are entitled to optimal comfort management before, during, and after procedures and that all HCPs have a responsibility to advocate and intervene to support the best interests of the patient. This includes having a procedure temporarily stopped to provide additional comfort measures if it becomes apparent that the current plan is ineffective. A procedure should be considered a biopsychosocial experience *for the patient* rather than simply a task to be completed by the HCP, and consequently, the plan may require a multimodal pharmacologic and nonpharmacologic approach. In addition, ASPMN recommends that nurses collaborate with other members of the health care team to establish policies and procedures outlining the expectations for procedural comfort management before, during, and after painful procedures. These policies and procedures should address available pharmacologic agents and nonpharmacologic techniques, patient selection criteria for various comfort interventions, risks and benefits, assessment and monitoring during and after the procedure, and patient teaching.

Clinical Practice Recommendations

Maintaining patient comfort before, during, and after procedures by collaborating with the patient and family in the creation of an individualized, cognitively, and developmentally appropriate plan of care for comfort and coping should be a priority and should occur before the procedure begins. If the patient is likely to experience repeated procedures, optimal comfort management with the initial procedure is crucial, as is the development of a comfort management plan for subsequent procedures.

No one technique is always better than another; the appropriate choice depends on the individual patient, procedure, setting, and HCP performing the procedure. In promoting a patient-centered approach to procedures, HCPs must recognize individual characteristics (e.g., physical condition, age, cognitive function, psychologic state, coping style, social, familial, and cultural characteristics, spiritual support) as well as preference for and previous experience with the procedure and various pain management modalities (Breiner, 2009). HCPs must promote quality of life as defined by the patient by providing appropriate comfort management, know and use treatments that minimize pain and trauma, assess comfort periodically, and engage the patient in the treatment decisions and process (Reddy et al., 2003). Research suggests that the following interventions are appropriate (adapted with permission from Children's Hospital and Health System, [CHHS], 2008):

Before the Procedure

1. Establish a plan for managing patient comfort if the procedure is likely to produce pain or anxiety.
 - a. Select appropriate pharmacologic and nonpharmacologic interventions.
 - b. Establish a mutually agreed upon comfort goal with the patient and family if indicated (e.g., young children, cognitively impaired).
 - c. Develop a plan to help the patient cope during the procedure (e.g., distraction, breathing, relaxation) (Breiner, 2009).
 - d. Consider procedural sedation if:
 - i. The procedure is believed to be significantly painful.
 - ii. Immobility of the patient is required for a longer period of time.
 - iii. The patient expresses great concern or distress at the thought of being awake during the procedure.
 - e. If procedural sedation is in the best interest of the patient but cannot be administered in the current setting, consider transfer to an alternate location where the administration of procedural sedation is possible.
2. Prepare:
 - a. Patient and family:
 - i. Provide education tailored to meet the patient and family needs (e.g., discussion, written materials, videos, etc.).
 - ii. Acknowledge patient's fears/concerns and modify the comfort management plan accordingly.
 - iii. A family member should be allowed to remain with the patient during procedures (if possible) when the patient believes this would be helpful (American Association of Critical Care Nurses, 2004).
 - (1) Provide coaching to family members regarding their role.
 - (2) If a family member is to be present, their role is to support the patient, not participate in or interfere with the procedure.
 - (3) The family member should be allowed to step away if needed.
 - b. Timing and location of procedure:
 - i. Negotiate the time and location of the procedure with patient/family and HCPs.
 - ii. Consider the following in choosing the location:
 - (1) Adequate space.
 - (2) Maximum privacy.
 - (3) Adjustable lighting.
 - (4) Minimal noise and interruptions.
 - (5) Accessibility to pharmacologic agents.
 - (6) Availability of supplies for nonpharmacologic techniques.
 - (7) Selection of music for relaxation if appropriate.
 - c. Prepare relaxation, distraction, and coping techniques based on patient preference, capabilities, and experience.
 - d. Decide how the patient will communicate unrelieved pain or anxiety to the nurse during the procedure.
 - e. Discuss the need for any premedication with the health care team:
 - i. Analgesic if pain is anticipated.
 - ii. Topical anesthetics if indicated.
 - iii. Anxiolytic if anxiety is present/anticipated.
 - iv. Sedation if patient is required to be immobilized for long periods of time or if significant pain is expected.
 - v. Appropriate monitoring devices as needed.

Note: Optimal management of procedures is always desired; however, if the patient will need repeated procedures, it is crucial. It is advisable to provide maximum safe treatment for pain and anxiety during the first procedure to minimize the development of anticipatory anxiety before subsequent procedures.
 - f. Ensure that medications are ordered, available, and administered to allow sufficient time for effectiveness before the procedure.
 - g. Prepare the health care team:
 - i. Know the procedure specifics:
 - (1) What will be done.
 - (2) How long it is anticipated to take.
 - (3) What kind of pain is anticipated.
 - ii. Gather appropriate supplies and equipment.
 - iii. Know if additional support staff are needed and their role.
 - iv. Identify someone to lead the distraction and coping techniques so the patient is not confused or over stimulated (if multiple staff are present).
 - v. Know how the patient and family member think the patient will respond.
 - vi. Know how often the procedure will need to be repeated.
- iii. Agree upon optimal patient position.

For children, studies have shown that supportive or comfort positioning can result in secure holds, close physical contact with a caregiver, and positive participation by the caregiver rather than negative restraining, promotion of a sense of control for the child, successful immobilization of the extremity when necessary, and reduced the number of staff needed to assist with the procedure (Stephens, Barkey, & Hall, 1999).

During the Procedure

1. Use agreed-on distraction/coping techniques.
2. Assess pain and anxiety (if patient is awake).
3. If pain and/or anxiety are not well controlled during the procedure, ask the HCP performing the procedure to

stop so that further evaluation can be conducted and the need for additional support (pharmacologic and/or nonpharmacologic) determined.

- a. Signs that the procedure may not be progressing as expected include but are not limited to:
 - i. Needing to restrain the patient as opposed to supporting the patient.
 - ii. Raised volume of voices, strained voices.
 - iii. Multiple people trying to lead, confusion.
 - iv. A patient who is moaning, crying, or striking out.
 - v. An upset family member.
 - vi. A feeling the need to “get it over with” instead of calmly performing the procedure.
4. Remember to remain calm and confident, do not rush. Respectfully remind others to do the same as needed.
5. Provide verbal coaching in a calm reassuring manner.
 - a. Evaluate if other interventions (pharmacologic or nonpharmacologic) are required before continuing.
6. Monitor family member and staff behavior and provide feedback to ensure that the environment remains safe and relaxed for the patient.
7. Use supplies known to minimize tissue trauma as appropriate (Reddy et al., 2003).

After the Procedure

1. Discuss/evaluate the procedure with patient and family if applicable.
2. Document the procedure, including an evaluation of the patient’s experience, from the patient, family, and HCP perspectives including recommendations for future procedures in the medical record.
3. Develop and implement a comfort management plan for after the procedure, because the pain resulting

from the procedure itself may not subside when the procedure is completed and must be treated appropriately.

- a. Multimodal (pharmacologic including opioids and adjuvants, and non pharmacologic) treatment may be indicated.
- b. The comfort plan should include care in the event the patient is no longer in the health care setting (i.e., home) after the procedure.

SUMMARY

To prevent the detrimental effects of pain across the life span and provide optimal pain management, including procedural pain management, are critical. Research clearly shows that patients continue to suffer from procedural pain. Sufficient evidence exists supporting the use of nonpharmacologic and pharmacologic interventions to accomplish this goal; HCPs have an ethical obligation to use this evidence to provide the best and safest care possible when participating in procedures. Although in some situations it may not be possible to completely eliminate pain, interventions before, during, and after procedures can reduce the amount and intensity of procedural pain; HCPs should collaborate to develop Policies and Procedures outlining expectations for comfort management surrounding procedures. ASPMN supports HCPs advocating and intervening to the best of their ability, including having a procedure temporarily stopped to provide additional comfort measures, based on the situation, setting, and best interests of the patient to promote optimal and safe comfort management during procedures.

APPENDIX B: RECOMMENDATIONS FOR PROCEDURAL COMFORT MANAGEMENT**Registered Nurse**

- Complete initial and ongoing educational requirements regarding procedural comfort management.
- Follow organizational policies and procedures regarding procedural comfort management.
- Communicate with the licensed independent practitioner (LIP) regarding the patient's status and tolerance of the procedure.
- Document assessment, interventions used, and evaluation of the procedure.
- Participate in quality-improvement activities regarding procedural comfort management.

Licensed Independent Practitioner (Prescriber)

- Follow organizational policies and procedures regarding procedural comfort management.

- Select and order documented safe medications for the provision of procedural comfort management as appropriate to the individual situation.
- Communicate with the patient (and family if applicable) and the registered nurse (RN) regarding the plans and expectations for the procedure.

Health Care Organization

- Ensure the development and use of interdisciplinary policies and procedures regarding procedural comfort management.
- Ensure that RN's role is consistent with state nurse practice laws and institutional policies and procedures.
- Ensure that LIPs have access to a formulary containing documented safe medications.
- Provide a means of documenting the procedure, comfort measures used and an evaluation of the procedure.
- Provide initial and ongoing education for RNs and LIPs with regard to procedural comfort management.
- Develop and maintain a system for evaluating procedural comfort management.

APPENDIX C: PROCEDURAL PAIN MANAGEMENT CHECKLIST

Before the Procedure**Establish a plan for managing patient comfort if the procedure is likely to produce pain and/or anxiety:**

- 1. Select appropriate pharmacologic and nonpharmacologic interventions.
- 2. Establish a mutually agreed-on comfort goal with the patient, and family if indicated (e.g., young children, cognitively impaired).
- 3. Develop a plan to help the patient cope during the procedure (e.g., distraction, breathing, relaxation).
- 4. Consider procedural sedation if:
 - a. The procedure is believed to be significantly painful.
 - b. Immobility of the patient is required for a longer period of time.
 - c. The patient expresses great concern or distress at the thought of being awake during the procedure.
 If procedural sedation is in the best interest of the patient but cannot be administered in the current setting, consider transfer to an alternate location.

Prepare patient and family:

- 1. Provide education tailored to meet the patient and family needs (e.g., discussion, written materials, videos, etc.).
- 2. Acknowledge patient's fears/concerns and modify the comfort management plan accordingly.
- 3. Provide coaching to family member(s) regarding their role if they stay with the patient.
If a family member is to be present, their role is to support the patient, not to participate in or interfere with the procedure, and they should be allowed to step away if needed.
- 4. Negotiate the time and location of the procedure with patient/family and HCPs.
- 5. Agree-on optimal patient position.
- 6. Prepare relaxation, distraction, and coping techniques based on patient preference, capabilities, and experience.
- 7. Decide how the patient will communicate unrelieved pain or anxiety to the HCP during the procedure.
- 8. Discuss the need for any premedication with the health care team.
- 9. Ensure that medications are ordered, available, and administered to allow sufficient time for medication to be effective before the procedure.

Prepare the health care team:

- 1. Know the procedure specifics.
- 2. Gather appropriate supplies and equipment.
- 3. Know if additional support staff are needed and their role.
- 4. Identify someone who will lead the distraction and coping techniques so the patient is not confused or overstimulated (if multiple staff present).

During the procedure:

- 1. Use agreed-on distraction/coping techniques.
- 2. Assess pain and anxiety (if patient is awake).
- 3. If pain and/or anxiety are not well controlled during the procedure, ask the HCP performing the procedure to stop so that further evaluation can be conducted and the need for additional support (pharmacologic and/or nonpharmacologic) determined.
- 4. Provide verbal coaching in a calm reassuring manner.
- 5. Monitor family member and staff behavior, and provide feedback to ensure the environment remains safe and relaxed for the patient.

After the procedure:

- 1. Discuss/evaluate the procedure with patient and family if applicable.
 - 2. Document the procedure, including an evaluation of the patient's experience, from the patient, family, and HCP perspectives including recommendations for future procedures in the medical record.
 - 3. Develop and implement a comfort management plan for after the procedure as the pain resulting from the procedure itself may not subside when the procedure is completed and must be treated appropriately.
-