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OPINION: NITROUS OXIDE ADMINISTRATION
APPROVED: X NOT APPROVED:
DATE: 1/08
REVISED DATE:
ORIGINATING COMMITTEE:
SCOPE OF PRACTICE COMMITTEE

ADVISORY OPINION

NITROUS OXIDE ADMINISTRATION

It is within the Scope of Practice of a Registered Nurse (RN) to administer nitrous oxide as a single agent, not to be administered concurrently with any other sedative or depressant.

I. General Requirements:

- A. Licensed Health Care provider is to be readily available in the facility.
- B. The patient will be assessed by a Licensed Health Care provider prior to the administration of nitrous oxide for American Society of Anesthesiologists (ASA) scoring. Only patients with ASA scoring of I or II are candidates for nurse administered nitrous oxide.
- C. A Licensed Health Care provider must be present during administration of nitrous oxide if nitrous is to exceed 50% and/or be administered to a child less than 18 months of age.
- D. A written policy and procedure is maintained by the employer/facility.
- E. Policies, procedures, and protocols (order sets) have been approved by the facility prior to implementation.
- F. Policies, procedures and order sets will include use of nitrous oxide as a (anxiolytic); describe the role of the Registered Nurse during nitrous administration, frequency of assessment, qualified prescriber availability, and ASA scoring.
- G. Policy and procedure will specify the required emergency equipment and medications which must be immediately available to the patient receiving any medication classified as anesthetic agents. This includes all emergency equipment and medication required to regain and/or maintain the patient's cardiac and respiratory state.
- H. Instructional program from a credentialed school or provider that includes nitrous oxide administration/airway management with a minimum 6 hours instruction including theory and didactic management of nitrous oxide administration.
- I. Only RNs who have satisfactorily completed an instructional program and have documented initial and annual clinical competency on file with the employer may administer nitrous oxide.
- J. Current certification in Basic Cardiac Life Support (BCLS) on file with the employer.

- K. Advanced Cardiac Life Support (ACLS) or Pediatric Cardiac Life Support (PALS) as suitable to the age of the patient is on file with the employer.
- L. Continuous pulse oximetry will be monitored on all patients receiving nitrous oxide.
- M. The RN responsible for administering nitrous oxide may not leave the patient unattended or engage in other tasks that could compromise continuous monitoring of patient, airway and/or level of consciousness.
- N. The RN has the right and responsibility to refuse to administer any medication that may induce procedural sedation when in the professional judgment of the RN, the medication or combination of medications, the dosages prescribed, or frequency of administration may produce a state of moderate or deep sedation or place the patient at risk for complications.
- O. The specific dosage parameters are established by the Licensed Health Care provider prior to the RN administering nitrous oxide.
- P. The RN may administer and discontinue the nitrous oxide as ordered by the Licensed Health Care provider.

II. Course of instruction to include, but not limited to:

- 1. Anatomy and Physiology specific to age levels.
- 2. Pre-sedation assessment specific to age levels.
- 3. Pharmacologic properties of nitrous oxide / oxygen.
- 4. Indications / Contraindications of nitrous oxide.
- 5. Techniques of administration, titration and termination of nitrous oxide use.
- 6. Level of consciousness assessment and physiological response to the drug.
- 7. Airway management.
- 8. Complication management.
- 9. Emergency situation management and appropriate interventions.
- 10. Abuse potential.
- 11. Employee exposure to nitrous oxide.
- 12. Legal implications, responsibility, documentation.
- 13. Nursing role.

Rationale: The intent of administering nitrous oxide is to achieve minimal sedation (anxiolysis). This procedure is performed by Registered Nurses with additional education, skills, and demonstrated competency. This advisory opinion CAN NOT be construed as approval for the RN to administer an anesthetic as in A.R.S. §32-1661.

Reference:

- 1. American Academy of Pediatrics Guidelines for Monitor and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures. (1992). *Pediatrics*. (89)6, 1110-1114.
- 2. American Academy of Pediatric Dentistry. (2005). Guideline on appropriate use of nitrous oxide for pediatric dental patients. *Pediatr Dent*. (27), 107-9.
- 3. American Society of Anesthesiologists Task Force on Sedation and Analgesia by Non-Anesthesiologists. (2002). Practice guidelines for sedation and analgesia by non-anesthesiologists. *Anesthesiology*. (96), 1004-17.
- 4. Annequin, D., Carbajal, R., Chauvin, P., Gall, O., Tourniaire, B., & Murat, I. (2000). Fixed 50% nitrous oxide oxygen mixture for painful procedures: A French survey. *Pediatrics*. (105), E47.
- 5. Brunick, A., & Clark, M. (2008) Handbook of Nitrous Oxide and Oxygen Sedation. (3rd edition).
- 6. Bartomei and Reefsnyder, Patient Care in Interventional Radiology, Chapter 1-3, November 2000.

7. Core Curriculum for Radiological Nursing, 1999.
8. Infusion Nursing Standards of Practice (2006), *Journal of Infusion Nursing*, 29 (1S), Lippincott Williams and Wilkins.
9. Manual on contrast media. Edition 4.1 (2003). American College of Radiology.
10. Maryland State Board of Nursing.
11. Onody, P., Gil, P., & Hennequin, M. (2006). Safety of inhalation of a 50% nitrous oxide/oxygen premix. A prospective survey of 35,828 administrations. *Drug Safety*. (20)7, 633-640.
12. Policies and Procedures for Infusion Nursing, 3rd Edition, Infusion Nursing Society, 2006.
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