

PARKLAND HEALTH & HOSPITAL SYSTEM
Nursing Services

Section: Medication
Written Date: August 1998
Revision Date: 07-07

Procedure #: NSG 20-16
Page: 1 of 3
Distribution: Nursing Procedure Manual

NITRONOX

L&D, ESD, BACU, BICU, OB/GYN ICC, ORAL SURGERY CLINIC AND PM&R DEPARTMENT

PRACTICE

STATEMENT: Nitronox is used for the purpose of analgesia. Patients should be alert and able to self-administer after being instructed on use.

PURPOSE: To provide guidelines for self-administration as a means of pain management for patients with mild to moderate pain.
To be used in conjunction with other analgesics for moderate pain.

EQUIPMENT: Nitrous Oxide Machine
Face Mask

GENERAL INFORMATION

A. Properties

Nitrous Oxide (N₂O) is a colorless, tasteless, sweet smelling gas. A combination of 50% nitrous oxide and 50% oxygen is considered optimal for safe patient administered analgesia.

B. Actions

Absorbed rapidly through pulmonary vasculature and carried through the blood in solution. Excreted unchanged from the lungs. Rapid onset of action (usually within 2-6 minutes) and quick elimination and cessation effects (2-5 minutes).

C. Indications

1. Use as an analgesic for alert patients complaining of mild to moderate pain such as:
 - Acute urinary retention
 - Fractures
 - Kidney stones
 - Minor surgical and gynecological procedures
 - Wound care/Burns
 - Laboring patients in 3rd or 4th stage

D. Contraindications

- Hypoxemia.
- Chest injuries (blunt or penetrating)
- COPD (chronic bronchitis, emphysema, chronic asthma)
- ETOH intoxication
- Head injuries
- Maniacal (psychiatric) patients
- Maxillofacial injuries
- Pediatric (who cannot self-administer)
- Suspected pneumothorax
- Suspected intestinal obstruction or visceral perforation
- Decompression sickness
- Pregnancy (except labor)

PROCEDURE

1. Nitronox machines are used in L&D, ESD, BACU, BICU, OB/Gyn ICC and PM&R Department.
2. Full Nitrous tanks are supplied by the units. Tanks will be obtained from MRD. (Biomed services the regulators.)
3. Full Oxygen tanks and masks are supplied by Respiratory Care Department.
4. Tanks shall be checked prior to use to ensure that both tanks are filled, with pressure gauges within safe administration levels.
5. Qualified Nursing personnel shall:
 - a. Deliver Nitronox machine to the patient upon order of the Licensed Independent Provider). Connect Nitronox machine scavenging system to the vacuum/suction outlet, if available.
 - b. Explain the purpose of the Nitronox to the patient.
 - c. Check vital signs before and after administration of Nitronox. **Note:** Nitronox may in some cases cause a drop in blood pressure. The provider's discretion must be used.
 - d. Instruct patient to self-administer Nitronox by placing the mask tightly against the face to create a good seal and taking slow, deep breaths. (In the BACU the provider will administer the Nitronox to pediatric patients.)

- e. Observe the patient for a pleasant facial expression, feelings of relaxation or lightness, and expression of feelings of tingling in his/her fingers or toes.
 - f. Monitor patient's safety during administration of Nitronox.
 - g. Discontinue the Nitrous Oxide if you observe prolonged inspirations, irregular breathing, involuntary eye movements, swallowing or gagging, dilated pupils and rigid muscles.
 - h. Document patient response (i.e., pain relieved) after use.
 - i. Close tank valves after use. Have the patient continue to breathe through the mask to bleed the system of any remaining gas until all gauges read zero.
 - j. Discard mask after procedure, if no longer needed. If patient will be using Nitronox again, clean mask and store in patient's room.
 - k. Disconnect the vacuum/suction line from outlet, if utilized.
6. Staff shall return patient to room and equipment to storage.
7. The Biomedical department is responsible for equipment maintenance and quarterly testing of equipment.