

**MILLE LACS BAND OF OJIBWE
HEALTH AND HUMAN SERVICES POLICY & PROCEDURE**

Department: Health Services-Dental

Policy Number: HHS-HS-DNT 1532

Policy Title: Administration of Nitrous Oxide/Oxygen for Anxiolysis in the Dental Setting

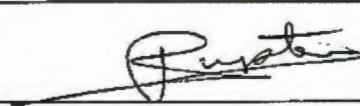
Attachments:

Revision History: 4/12/2013

Revised by/Date: Dr. Ravi Gupta 9/27/2020

Approved by:

Dr. Ravi Gupta, Dental Director



Date:

01/07/2021

Approved by:

Nicole Anderson, Commissioner of HHS



Date:

1-8-2021

POLICY STATEMENT: The administration of nitrous oxide gas via inhalation is an adjunct modality used to lessen a patient's elevated anxiety during dental treatment. It is convenient due to its ease of administration and the fact that it is quickly reversible. There is the necessity to administer nitrous oxide in a controlled environment due to the increased risk of general health problems and reproductive difficulties in dental employees that are chronically exposed to high concentrations of the gas.

PURPOSE: This policy covers only the requirements and controls to be followed for administering nitrous oxide/oxygen with or without a local anesthetic for the purpose of anxiolysis.

DEFENITIONS:

Anxiolysis - The diminution of anxiety

Inhalation - a technique of administration in which a gaseous or volatile agent is introduced into the pulmonary tree and whose primary effect is due to absorption through the pulmonary bed.

N₂O-O₂ : nitrous oxide-oxygen

PROCEDURE:

I. Credentials and Privileging

A. Dentist:

1. Must be duly licensed in any State Board of Dentistry of the United States with N₂O/O₂ certification. This must be verifiable in the form of a certificate or online verification on the State Board of Dentistry webpage.
2. Provider must hold full and unrestricted privileges to practice general dentistry.

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3. Must demonstrate continued clinical competence in the use of N₂O-O₂.
4. If Quality Assurance (credentialing), or Dental Supervisor/Dentist has reason to question the qualifications, training, or competency of any individual requesting privileges, the individual may be required to demonstrate clinical proficiency in the use of nitrous oxide conscious sedation. To demonstrate clinical proficiency, the practitioner must treat patients with this modality while under the direct supervision of a dentist who has current privileges and experience in the use of nitrous oxide conscious sedation. The supervising dentist must sign a statement certifying that the individual has demonstrated clinical proficiency.
5. Practitioners who cannot demonstrate clinical proficiency will be denied privileges. Practitioners who have had previous training but cannot demonstrate current clinical proficiency may be provided supplemental (refresher) training, if appropriate, until they are able to demonstrate proficiency. Refresher training should be designed to meet specific instructional needs. Refresher training does not necessarily need to be a complete course.
6. Privileges for the use of nitrous oxide conscious sedation will be considered lapsed if a dentist has not used this modality at least five times in a two year period. Once lapsed, privileges may be regained by refresher training and by demonstrating clinical proficiency as outlined above.

B. Dental Assistant:

1. Certification in CPR (BLS) must be current.
2. Must have an initial orientation in the use, control measures, and potential hazards of N₂O/O₂ by a privileged practitioner.

C. All Staff:

1. Will be given orientation on the N₂O-O₂ equipment every two years. This is to include its operation, engineering controls, maintenance procedures, exposure monitoring, and work practices.

II. Clinical Guidelines

A. Patient Selection

1. Proper indications – mild to moderate anxiety.
2. Medical history review - N₂O/O₂ is contraindicated in patients with the following (*Licensed Dental Provider will finally determine this on a case to case basis):
 - a. Pneumothorax
 - b. Cystic Fibrosis
 - c. COPD.
 - d. Recent pneumocephalography
 - e. A large fatty meal within 1 hour prior to dental visit*
 - f. Pregnancy
 - g. Suspected /known pernicious anemia or B12 deficiency
 - h. Significant bowel obstruction
 - i. Cancer therapy using Bleomycin sulfate
 - j. Psychological impairment (inability to comprehend the procedure)
 - k. Current psychotropic drug use*
 - l. Current or recovering drug use addiction*

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- m. Patient in shock, semi-conscious or with serious head facial injuries
 - n. Inability to understand procedure or unwilling to consent to procedure.
 - o. Other conditions upon consult with patient's health care provider(s).
 - p. **Relative contraindications:** Current upper respiratory tract infection, acute sinusitis, middle ear disturbance /surgery, recent eye surgery using perfluoropropane or sulfur hexafluoride
 - 3. A signed consent from the patient, parent or legal guardian shall be obtained prior to the administration of N₂O-O₂.
- B. Equipment Storage
 - 1. Six portable Nitrous-Oxygen Units are stored in a 'secured' locked room whenever not in use. The cabinet is located on the clinic floor opposite operatory #8.
- C. Designated Operatories
 - 1. Dental procedures utilizing N₂O/O₂ portable units can be located in all operatories.
 - 2. Operatories for N₂O/O₂ administration have:
 - i. Doors (#8,9,1)
 - ii. Adequate air vents –and exhaust is available in the clinic
 - iii. N₂O/O₂ Porter caddies with scavenging system, airflow meter, fail-safe mechanism.
 - iv. SpO₂ Monitoring if N₂O > 50%
- D. Equipment Inspection and Monitoring

Nitrous Oxide Equipment Log: All the inspections listed below will be entered into the 'Nitrous Log Book'.

 - 1. Initial Inspection and subsequent Annual Basis
 - A. N₂O/O₂ equipment inspection and air monitoring for ambient concentrations of N₂O by the Area Office of Environmental Health Services on an annual basis.
 - B. Room Ventilation: Operatory rooms' ventilation flows are adequate.
 - 2. Weekly and with Each Usage:
 - A. Gas tank pressures
 - B. MXR Flow-meter Failsafe System Check
 - C. Inspect all equipment relating to N₂O-O₂ administration for worn or leaking parts, connections, hoses. Replacement parts, sealing leaks, etc. will be necessary when deficiencies are identified.
 - 3. Monthly leak testing: this will be done to confirm the absence of leaks on hoses and their connections (i.e. soap solution).
 - 4. Dosimeter: At the minimum the two most exposed staff will wear a Diffusive Sampler/Passive Dosimeter badge during every N₂O-O₂ administration during periodic dosimetry; this will be sent off quarterly for a new office for the first year and then semiannually for calibration.
- E. Administration

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Inspection before each use:

1. Visual inspection of all N₂O-O₂ equipment (hoses, reservoir bag, tanks, gauges).
2. Confirmation that enough Nitrous and Oxygen (Gas Pressure) is present for the administration time needed.
3. Turn on N₂O tank and check all high-pressure connections for leaks (non-oil based soap applied and check for bubbles).
4. MXR Flow-meter Failsafe System Check
5. All equipment gauges will be placed in full view for constant monitoring.

Procedural Checks:

1. Reviewed and signed medical history;
2. Signed informed consent form.
3. Select proper sized mask to assure adequate scavenging, connect to hoses and turn on 'vacuum'.
4. Place and comfortably fit mask to patient. Check reservoir bag to assure that it is not over-inflated or under-inflated.
5. Patient speech should be minimized and a dental dam should be utilized whenever possible.
6. Administration starts and ends with 100% O₂.
7. Nitrous levels for N₂O-O₂ administration will be set no higher than 50%, if concentrations higher than 50% are used then SpO₂ will be monitored.
8. During N₂O-O₂ administration vital signs (blood pressure, pulse, and O₂ saturation) will be monitored.
9. Following the procedure, the patient is administered 100% oxygen for a minimum of 5 minutes to clear the nitrous oxide from the body.
10. Dentist observes and questions patient to ascertain physical state before allowing patient to leave.
11. The N₂O-O₂ administration length, concentration level, discharge status is entered into patient's chart.

F. Procedural documentation - a nitrous oxygen administration notes will be completed for each procedure by the practitioner and will be entered in the chart'

Department's Nitrous Administration Record Form

- a. Equipment was inspected (see section 'E' above).
- b. Review of patient's medical history
- c. Vital Signs (blood pressure, pulse, oxygen saturation): Preoperative (before nitrous administration), intra-operative (at peak concentration level), postoperative (following O₂ Flush)
- d. Time N₂O flow began and ended
- e. Percentage concentration of nitrous oxide to oxygen administration during the procedure at scheduled intervals. Total Flow in Liters

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- f. Peak concentration of N₂O administered
- g. Amount of postoperative oxygenation time (in minutes) for patient recovery
- h. All patient treatment and drugs administered
- i. The patient's postoperative condition.
- j. Postoperative instructions were given
- k. Adverse events or patient complaints
- l. Names of persons in attendance during the procedure.

Internal and/or External References	<ol style="list-style-type: none"> 1. https://www.ada.org/en/member-center/oral-health-topics/nitrous-oxide 2. https://www.cdc.gov/niosh/docs/hazardcontrol/hc3.html
Compliance - Posting Date	
Replaces – Policy Number	
Next Review - Due Date	