

Nitrous Oxide Systems Maintenance in Clinical Areas

Procedure: 6.18
Version: 2.0
Effective: 7/30/2013
Revised: 3/8/2016

A. Purpose

To maintain nitrous oxide delivery systems in clinical areas operated and maintained by the College of Dental and Oral Medicine (CDM) to minimize potential exposures to staff and patients.

B. Applicability/scope

This policy applies to clinical locations where nitrous oxide is used as an anxiolytic or analgesic. It specifically speaks to maintenance of nitrous oxide delivery systems, preventive maintenance for house ventilation systems, and monitoring to ensure employee exposure is kept at a minimum.

C. Responsibilities

1. CDM

- a. Implement this policy at its sites where nitrous oxide is used as an anxiolytic or analgesic.
- b. Assign and train individuals to perform monthly and annual checks on nitrous oxide delivery system and use as prescribed by this policy.
- c. Maintain a log of all maintenance checks on delivery system.
- d. Arrange for regular preventive maintenance and annual performance check of ventilation systems.
- e. Coordinate with EH&S for annual monitoring and training as necessary.

2. EH&S

- a. Coordinates third party monitoring for ambient release of nitrous oxide.
- b. Performs personal monitoring for exposure to nitrous oxide monitoring as necessary or when requested.
- c. Provide annual nitrous oxide safety training to staff and students potentially exposed to nitrous oxide.
- d. Maintain records of training and monitoring and provides such records to CDM, when requested.

3. Facilities

- a. Work with CDM for ventilation maintenance checks to ensure proper functioning of the HVAC system and maintenance of 12 air changes per hour (ACH).
- b. Provides preventive maintenance on ventilation system as necessary.
- c. Coordinates annual maintenance of ventilation system with CDM and EH&S.

D. Definitions N/A

E. Procedures

1. Delivery System Checks

- a. Nitrous oxide holding tanks will be secured according to applicable codes and checked for leaks after connection by CDM.

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- b. Nitrous oxide delivery units will be serviced by the Biomedical Engineering on an annual basis by CDM.
- c. Nitrous oxide delivery units will be monitored, at a minimum, on a monthly basis using TIF Leak Detector. This includes all hoses, fittings, connections, and reservoir bags by CDM.
- d. Wall connections will be monitored, at a minimum on a monthly basis by CDM.
- e. The nitrous cut off will be secured at the end of each day by CDM.

2. Equipment Maintenance

- a. Anesthesia-delivering machines shall be maintained per manufacturer recommendations by CDM staff.
- b. Equipment shall be checked monthly for worn parts and replaced as necessary by CDM.
- c. Equipment found not working should be tagged and removed from service by CDM.

3. Ventilation System Checks

- a. Air supply grilles and exhaust vents will be checked, at a minimum on a monthly basis, with a kim wipe by CDM.
- b. The room entrance door, when feasible, will be kept closed during use of nitrous oxide to prevent blocking of exhaust system by CDM.
- c. The ventilation system will be measured annually to ensure 12 air changes per hour in all rooms using nitrous oxide by CDM.

4. Monitoring

- a. The ambient release of nitrous oxide will be coordinated by EH&S annually in rooms using nitrous oxide.
- b. Personal samples may be taken by EH&S when necessary or requested.

5. Training

- a. Training in the safe use of Nitrous Oxide will be provided by the supervisor to employees involved in its use and the support staff working in the area
- b. General training on nitrous oxide will be provided by EH&S during the CDM annual trainings.

F. Emergency contacts – N/A

G. Medical Surveillance –N/A

H. Recordkeeping

- 1. A log of monthly and annual maintenance checks will be maintained by the CDM.
- 2. Records of training and monitoring will be maintained by EH&S and provided to CDM, when requested.

I. Appendices – N/A

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J. Forms – N/A

K. References

Occupational Safety and Health Guideline for Nitrous Oxide

<http://www.osha.gov/SLTC/healthguidelines/nitrousoxide/recognition.html>

<https://www.osha.gov/dts/osta/anestheticgases/>