GENERAL BYLAWS

BYLAW 27-94

THE MANITOBA DENTAL ASSOCIATION

THE UTILIZATION OF NITROUS OXIDE/OXYGEN SEDATION, INTRAVENOUS/INTRAMUSCULAR CONSCIOUS SEDATION AND GENERAL ANAESTHESIA TECHNIQUES

The Manitoba Dental Association Act Bylaw 27-94

A Bylaw to provide for the registration of dentists and their offices, when the following modalities are to be used:

I. - NITROUS OXIDE/OXYGEN CONSCIOUS SEDATION
II. - INTRAVENOUS/INTRAMUSCULAR CONSCIOUS SEDATION
III. - GENERAL ANAESTHESIA

Prior to any dentist utilizing any of these in his/her office, he/she must first apply to the Manitoba Dental Association to proceed. Included in the request must be:

1. Certificate showing successful completion of a course of training;
2. Specific itemization of the equipment to be used;
3. A request to have an in-office audit performed by the Manitoba Dental Association Ad Hoc Committee on Anaesthesia, prior to patients being treated; and
4. The completion of an Application for Approval form (attached as an Appendix to this Bylaw) for all techniques being utilized. All offices providing service in these techniques will be inspected by the Manitoba Dental Association Ad Hoc Committee on Anaesthesia. Those utilizing a member of the College of Physicians and Surgeons of Manitoba as an anaesthetist to provide the service will require the physician to apply to the College according to their Bylaw 3-D, and will be inspected conjointly.

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This document is the “Standard of Practice” in relation to the induction of all forms of conscious sedation, deep sedation or general anaesthesia with respect to dental services in Manitoba. Since contravention of these Guidelines may be considered “professional misconduct”, dentists employing any modality of drug-induced sedation or general anaesthesia must be familiar with their content, be appropriately trained and regulate their practices accordingly.

Preamble

This Bylaw is intended to provide the Manitoba Dental Association with a recognized, formalized procedure for assuring that the public is receiving anaesthesia services from practitioners have sufficient training, and that their facilities meet the recognized guidelines for acceptability.

The following guidelines may change from time to time. The requirements of the Bylaw, once approved, will be in effect continuously. The Manitoba Dental Association Ad Hoc Committee on Anaesthesia will consider the Guidelines to be the accepted standard for the profession.

Oral (enteral) sedation in excess doses or in patients with a particular sensitivity to the administered medications may produce an undesirable and unpredictable depth of sedation and may be potentially dangerous especially in patients at the extremes of age (ie. over 70 and under 3 years of age). The combination of oral sedation with other sedation techniques (IV/IM conscious sedation, N2O/O2) should be used with caution due to the unpredictability of the depth of sedation that may occur. Established dosing guidelines should not be exceeded.

Medications used for sedation with known pharmacological antagonists are recommended.

Any practitioner using any of these methods should be cognizant of the requirements and regulate his/her facilities to incorporate the provisions of this by-law.

Any questions should be directed to the Ad Hoc Committee on Anaesthesia.
**Definitions**

Important words to know and understand when reading this Bylaw are:

*May or Could:* indicates freedom or liberty to follow a suggested alternative.

*Shall or Must:* indicates imperative need and/or duty; an indispensable item; mandatory.

*Should:* indicates the recommended manner to obtain the standard; highly desirable.

*Conscious Sedation:* a minimally depressed level of consciousness that retains the patient's ability to maintain the airway independently and continuously, and to respond appropriately to physical stimulation and verbal command; produced by pharmacologic and non-pharmacologic methods, alone or in combination.

*Deep Sedation:* a controlled state of depressed consciousness, accompanied by partial loss of protective reflexes, including inability to respond purposefully to verbal command; produced by pharmacologic or non-pharmacologic methods, alone or in combination.

*General Anaesthesia:* a controlled state of unconsciousness accompanied by partial or complete loss of protective reflexes, including inability to maintain an airway independently, or to respond purposefully to physical stimulation or verbal command; produced by pharmacologic or non-pharmacologic methods, alone or in combination.
I. Guidelines for the Use of Nitrous Oxide/Oxygen Conscious Sedation

A. Definition

Nitrous oxide/oxygen conscious sedation as applied in dentistry is recognized by the Manitoba Dental Association as a mood alteration by inhalation of nitrous oxide and oxygen without loss of consciousness or protective reflexes. The patient must remain at a level of sedation from which he or she can easily be roused and a verbal response elicited. When nitrous oxide/oxygen conscious sedation is used, it must not be the intent of the dentist to produce deep sedation.

B. Operator Training

1. Only licensed dentists are eligible to qualify as operators for this mode of sedation.

2. Any dentist undertaking to utilize nitrous oxide/oxygen sedation must be qualified in one of the following ways:

   a. By having completed a course of training that is recognized as adequate by the Manitoba Dental Association. Such courses may be listed with the Registrar or, in the event that they are not, the Registrar may approve as adequate those courses that satisfy the following basic criteria:

      (1) Organized by dentists with formal training in all areas of anaesthesia and sedation as they apply to dentistry and supplemented by individuals experienced in this technique.

      (2) Consisting of didactic components providing adequate background in the areas of physiology, pharmacology, patient evaluation, emergency care, and the physics and mechanics of delivery systems.

      (3) Providing adequate "hands on" clinical experience to participants in which they perform dental treatment and nitrous oxide/oxygen sedation.

      (4) Successful completion of the course should depend on the candidate's performance evaluated on the basis of written examination and/or clinical performance.

   b. By completion of a recognized program of anaesthesia training, with some specific training in the use of nitrous oxide/oxygen sedation in dentistry. For example, many hospital dental internships, residencies and graduate programs offer this type of experience.

   c. Dentists whose undergraduate training includes full training in nitrous oxide/oxygen sedation and who can provide the Registrar with proof of such experience.
d. Individuals with backgrounds in nitrous oxide/oxygen sedation outside of those described in I.B.2.a and I.B.2.b, and particularly individuals with long-term experience using this mode, may be granted qualification by the Registrar upon application and review as deemed necessary by the Registrar and his/her advisors.

e. All licensed dentists administering nitrous oxide/oxygen sedation must register with the Manitoba Dental Association, for their own medico-legal protection.

C. Equipment

1. All nitrous oxide/oxygen delivery systems must be registered with the Manitoba Dental Association.

2. No machine shall deliver less than 30% oxygen on a continuous basis.

3. Machines must have a safety mechanism that will shut off the machine unless at least 30% oxygen is being delivered to the patient.

4. It is recommended that machines should not deliver less than 50% oxygen.

5. The ultimate responsibility of ensuring proper installation, subsequent functioning and regular disinfection and monitoring of the equipment and system lies with the dentist. Guidelines for installation of a built-in system with a central supply source are included in Appendix "A".

6. It is recommended that scavenging systems be used to minimize pollution of office air.

   If a scavenging system is not employed, minimum measures such as well placed fans and adequate ventilation systems must be used to minimize exposure to office personnel. The risk to office personnel must be recognized and appropriate safety measures undertaken (see Appendix "B").

D. Standards of Practise

1. Staff other than licensed dentists must not administer nitrous oxide/oxygen sedation, and the dentist must be in the room at all times during the administration.

   The dentist must also have an auxiliary in the room at all times during the administration.

2. The dentist administering the sedation must be completely familiar with all aspects of the delivery system, pharmacology of the drugs, and possible adverse responses and how to manage them.

3. The dentist must have readily available an emergency kit, oral pharyngeal airway and an "Ambu" bag with full face mask in adult and child sizes.
4. The dentist must be trained and proficient in cardiopulmonary resuscitation.

5. The dentist must make an adequate evaluation of the patient's physiological and psychological ability to tolerate the sedation and keep a written record of the evaluation in the patient's chart.

6. The dentist must ensure that the sedation is administered only to those patients who have a legitimate indication of its use and ensure that patients are informed and understand its purpose and effects, and agree to this form of treatment.

7. The dentist must ensure that a patient receives an adequate recovery period under supervision following treatment before being allowed to leave the office.

8. Patients must be cautioned against operating machinery or driving a vehicle after the treatment. When circumstances indicate, the patient should be accompanied home by a responsible family member or friend.
II. Guidelines for the Use of Intravenous/Intramuscular Conscious Sedation

A. Definition

Intravenous/intramuscular conscious sedation is a recognized technique in the practice of dentistry and oral and maxillofacial surgery, and the following guidelines are provided to the profession in order to ensure that the technique is properly utilized.

The intravenous administration of drugs must be a technique whereby the patient remains conscious with protective reflexes present at all times. When intravenous sedation is used, it must not be the intent of the dentist to produce deep sedation.

B. Operator Training

1. Only individuals with the any of the following training shall be eligible to use I.V./I.M. sedation in their practice:
   a. A dentist who has completed a dental internship or post-graduate training in anaesthesia, which should take at least one calendar year, of which a period of no less than one month is devoted to the learning of general anaesthesia and related subjects in the operating room, as well as sufficient clinical exposure to all sedation modalities to permit the dentist to gain both proficiency and confidence.
   b. A certified oral and maxillofacial surgeon.
   c. A certified anaesthetist.
   d. A physician with formal training in all areas of anaesthesia as they apply to dentistry.
   e. A dentist who has, in the past, successfully utilized I.V./I.M. sedation in his/her practice and holds a certificate from an acceptable post-graduate training program.

The program must have provided comprehensive clinical and didactic training in sedation and analgesia of at least forty hours in duration, of which \( \frac{1}{3} \) to \( \frac{1}{5} \) of this time was devoted to clinical application.

Evidence of successful assessment is mandatory and will involve the mentoring of a minimal number of cases to be determined by the program.

   f. A dentist who has completed training acceptable to the Manitoba Dental Association Ad Hoc Committee on Anaesthesia.
C. Emergency Armamentarium

1. Minimal standards for resuscitation equipment in dental surgeries in which sedation techniques are undertaken include:

   a. A means of inflating the lungs with oxygen must be available. The supply of oxygen to the apparatus should have a minimum duration of one hour at 10 litres/min.

   b. Pharyngeal airways must be available.

   c. A means of measuring arterial blood pressure must be available.

   d. Suction and attachments for pharyngeal evacuation must be available.

   e. Armamentarium for intubation must be available.

2. The following drugs must be available:

   - antiarrhythmic(s);
   - anticholinergic(s) (atropine);
   - antihistaminic(s);
   - intravenous fluid replacement;
   - bronchodilator;
   - coronary artery vasodilator(s);
   - flumazenil (if benzodiazepines are used);
   - naloxone (narcan) (if narcotics are used);
   - vasopressors; and
   - any other appropriate drug(s) or drug antagonist(s) which from time to time will become available and would be generally used to successfully treat an anaesthetic or medical emergency.

An appropriate means for delivery of the above must be available.

D. Patient Selection

Candidates for sedation should be carefully evaluated in terms of their physical readiness. Only patients classified as A.S.A. I or II should be treated in the dental office (ie. normally healthy patients and patients with mild systemic disease under control). All other patients who do not fit into the above category will only be considered after a consultation with the appropriate medical practitioner involved.

E. Standards of Practise

1. Dentists and auxiliaries shall acquire and maintain expertise in basic cardiac life support.

2. Dentists administering sedation should consider the prudence of emulating the program of the American Association of Oral and Maxillofacial Surgeons

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(AAOMS) for evaluation of their practise techniques. Their "Office Anaesthesia Evaluation Manual" is good background for the undertaking and implementing of such a program.

1. The use of pulse oximetry is required.

2. An intravenous infusion must be present during the anaesthesia period.

3. Emergency back-up power service must be available on site of all monitoring equipment.

4. Pre-operative and post-operative procedural guidelines:
   
   1. An adequate medical history must be recorded and form a permanent part of the patient's file.

   B. Informed consent should be obtained prior to any dental procedure utilizing intravenous sedation.

   3. Blood pressure, pulse rate and oxygen saturation must be taken and recorded throughout the procedure.

   4. An appropriately trained auxiliary must be in the treatment room at all times during the procedure, as well as in the recovery area. A recovery area is an area reserved for the express purpose of accommodating the sedated patient, from the time the sedation in the operatory ends until such time as the patient is dismissed. An operatory may serve as a recovery room in a dental office, provided the patient is supervised and sufficient time is scheduled between cases, to allow for recovery.

   *Emergency evacuation protocol must be possible with access doors wide enough for a wheelchair and stretcher to permit safe transport of the patient.*

5. A written account of all drugs and dosages must be recorded.

6. Patients should be provided with oral and written post-operative care instructions. Patients are permitted to leave the dental office only in the company of a responsible family member or friend, and warned not to operate a motor vehicle or machinery for a period of twenty-four (24) hours.
III  Guidelines for the Use of Ambulatory General Anaesthesia in Dental Offices

1. Definition

General anaesthesia, for the purpose of this Bylaw should be understood to include:

1. General anaesthesia (fully unconscious techniques).

2 Neurolept anaesthesia - there is significant suppression of the patient's reflexes almost to the point of general anaesthesia.

3 Sedation techniques which at any time produce the significant loss of conscious protective reflexes.

2. Operator Training

1 Any dentist who engages in the practice of general anaesthesia as defined above must possess one or more of the following credentials or qualifications:

1. Documented evidence of successful completion of a formal graduate course of instruction exclusively in the area of general anaesthesia and its related disciplines given by a recognized teaching institution. This course must be a minimum of twelve consecutive months in duration. It must include didactic as well as clinical training.

2. Documented evidence of successful completion of a formal graduate course of instruction in the specialty of Oral and Maxillofacial Surgery given by a recognized university. This course must include the expressed intent to produce competence in the area of general anaesthesia by means of significant didactic and clinical training.

3. Facilities

1 The dental office in which general anaesthetics are administered must have adequate facilities. The only significant facility required that is not customarily found in a dental office is a recovery area. Recovery accommodation is an absolute requirement, and an office without such an area is not suitable for general anaesthesia.

A recovery area or recovery room is an area reserved expressly for the purpose of accommodating the post-anaesthetic patient from the time the anaesthetic in the operating room ends until the patient is dismissed (i.e. the recovery period). It must be located in a place in the office that allows adequate supervision by the anaesthetist or surgeon.

2 The recovery area must have the appropriate means to administer sufficient oxygen by intermittent positive pressure ventilation to an adult patient for at
least one hour. The supply of oxygen should include at least one portable unit, for administration in a similar manner.

3 Dental chairs used for general anaesthesia and recovery should be capable of being placed in supine and head down positions.

4 Bedside suctions for evacuation of secretions, blood, etc., from the airway should be available for every patient in the recovery area.

5 Where central piped oxygen and suction units are employed in the recovery area, these must be backed up by at least one portable unit to carry out each of these functions in case of a central failure of supply.

6 Access doorways should be wide enough to allow access to a wheelchair and stretcher, in order to permit safe transportation of the patient from the surgical area to the recovery area.

7 Room lighting must be adequate to permit evaluation of the patient's skin and mucosal colour; fluorescent overhead lights with daylight tones are desirable. Battery operated back-up lighting must be available in case of power failure.

8 An adequate number of recovery areas must be available to accommodate the office general anaesthetic case load with adequate recovery time for each case.

9 Emergency back-up power service must be available on site for all monitoring equipment.

4. Equipment

The dental office in which general anaesthetics are administered must be properly equipped.

IV Anaesthetic gas machines, lines and circuits

1. Systems must be registered with the Manitoba Dental Association.

2. Machines used for the delivery of anaesthetic gases are numerous in type, style and manufacturer. Regardless of which specific machine is used, it must function reliably and accurately with respect to gas pressure and concentrations. It must be certified as performing properly by the manufacturer or a suitably qualified service agent on a regular basis as suggested by the manufacturer, or annually, whichever is most frequent. It must receive the care and maintenance dictated by the manufacturer. A written maintenance record must be maintained.
3. The installation of gas piping or conducting systems must be performed by competent and experienced personnel, and comply with all standards and qualities dictated by the manufacturer and governmental regulatory bodies.

4. Installations must be capable of confirmation beyond doubt to be carrying appropriate lines to the appropriate outlets. Reconfirmation must follow any repairs or renovations.

5. To assure the presentation of inter-change or cross lineage of gas cylinders to gas lines or of gas lines to gas machines, pin-index and diameter-index safety systems for all gas connections must be used.

6. Prior to each case, adequacy of the volumes of gases on hand should be confirmed along with the availability of a back-up supply of oxygen, to ensure that the supply of oxygen cannot fail during treatment.

7. A full complement of armamentarium to complete an anaesthesia circuit includes:

1. a reservoir or re-breathing bag of appropriate size;
2. an expiratory valve;
3. tubing from the machine; and
4. either a nasal hood (mask) or endotracheal tube and connector of appropriate size.

8. A satisfactory system for removing waste anaesthetic gases from the office environment must be employed.

IV Ancillary anaesthesia equipment

A. The following equipment must be available and in good working order:

1. child and adult sizes of full face masks and appropriate connectors;
2. laryngoscope, complete with adequate selection of blades and spare batteries and bulb;
3. an adequate selection of endotracheal tubes and appropriate connectors;
4. an adequate selection of oral airways;
5. a tonsillar suction tip adaptable to surgical and recovery room area suction outlets;

9. Blood pressure monitoring equipment and stethoscopes must be available for operating and recovery rooms.

IV Emergency armamentarium

10. The following equipment must be available and in good working order:
1. portable apparatus for intermittent positive pressure ventilation (eg. "Ambu" bag, masks, connectors);
2. portable battery-powered light source;
3. auxiliary suction;
4. apparatus for emergency tracheotomy or cricothyroid membrane puncture;
5. electrocardiogram monitor and defibrillator.

11. The following drugs must be available:
   · antiarrhythmic(s);
   · anticholinergic(s);
   · antihistaminic(s);
   · intravenous fluid replacement;
   · bronchodilator;
   · coronary artery vasodilator(s);
   · vasodilator(s);
   · narcotic antagonist(s);
   · sodium dantrolene;
   · succinylcholine;
   · corticosteroid;
   · vasopressors; and
   · any other appropriate drug(s) or drug antagonist(s) which from time to time will become available and would be generally used to successfully treat an anaesthetic (or medical) emergency.
   · An appropriate means for delivery of the above must be available.

E. Standards of Practise

1. The anaesthetist is responsible for all aspects of care and safety which relate to the administration of general anaesthetic in a dental office.

2. The Surgeon/Anaesthetist is not an acceptable method of practise in the province of Manitoba.

3. A general anaesthetic should not be administered to a patient in a dental office unless assurance has been obtained that the patient will be supervised for an adequate period of time after discharge from the dental office.

4. Pre-operative and post-operative procedural guidelines:

12. a medical history and physical examination must be recorded and form a permanent part of each patient's file.

13. laboratory investigations shall be used where indicated at the discretion of the surgeon or anaesthetist.
14. blood pressure, pulse rate and oxygen saturation must be monitored where indicated and form a part of the anaesthetic record.

15. Patients should be provided with oral and written post-operative care instructions. Patients are permitted to leave the dental office only in the company of a responsible family member or friend, and warned not to operate a motor vehicle or machinery for a period of twenty-four (24) hours.

IV. Inspections

A. The dental office will, at all reasonable times, be open for inspection by representatives of the Manitoba Dental Association, at the discretion of the Board.

2. Inspections may be carried out in accordance with the Bylaws established in accordance with the Dental Association Act.

V. Certification

A certificate of continuing approval shall be issued for a period of five (5) years to those practitioners and office which continue to meet the requirements of this Bylaw or any amendments that may be in effect at that time.
GUIDELINES FOR THE INSTALLATION OF BUILT-IN NITROUS OXIDE-OXYGEN DELIVERY SYSTEMS

It is recognized that plumbed-in systems for delivery of oxygen and nitrous oxide to individual dental operatories have advantages over portable systems that are related to convenience, efficiency, and the economy of purchase of large cylinders of gas.

The dentist bears the responsibility of ensuring that the system is installed in a manner that is safe for both patients and staff - with understanding of the potential health and fire-safety risks associated with these gases.

1 Piping Systems
   a Only specially licensed plumbers with appropriate qualifications should be allowed to install medical gas systems.
   b Piping should be made of hard copper and be cleaned and de-greased.
   c Fittings should be brass or hard copper and be cleaned and de-greased.
   d The method of attachment of fittings and connections should be determined by the local or provincial fire code. Requirements usually include the use of either silver soldered or flare fittings.
   e The piping system must be pressure checked for leaks after installation.
   f The dentist must assure that there is a proper test of the piping system after installation to assure that the gas lines are not cross-connected. The system must be rechecked after any repairs or modifications to the system are made.

2 Diameter Index Safety System (DISS)

   This is a system of interchangeability of threaded fittings for medical gases designed to prevent the administration of the wrong gas.

   To avoid the misapplication of nitrous oxide all nonpermanent gas connections must be fitted with the appropriate diameter-indexed fittings.

3 Gas Cylinder Storage
   a Reference should be made to the local or provincial fire-code to determine the maximum volumes of compressed gas that may be stored in the location of the dental office.

      Many fire departments require or recommend the registration of locations of compressed gas storage and/or the placement of special identification stickers on the outside of doors of areas of gas storage.

   b Cylinders should be stored in a cool, dry, well-ventilated room.
c Open flames (such as pilot lights) should be avoided.

d Cylinders should not be installed in rooms with machines such as compressors.

e Cylinders should be securely attached to the wall by chains.

f Never permit oil, grease or other readily combustible substances to come in contact with cylinders, valves, regulators or fittings.

g Prior to each use of the system the dentist must check and assure that there are adequate volumes of gases on hand to complete the intended procedure.

References

(1) "Inhalation Anaesthetics in Ambulatory Care Facilities", National Fire Protection Association, 470 Atlantic Avenue, Boston, Mass. USA 02210

(2) "Anaesthesia and Sedation in the Dental Office", NIH Consensus Development, Volume 5, Number 10, 1985

(3) CSA Code 301.5
MEASURES RECOMMENDED TO MINIMIZE EXPOSURE OF
DENTAL PERSONNEL TO NITROUS OXIDE

In view of the evidence of possible adverse effects on health due to chronic exposure of individuals to environmental levels of nitrous oxide in operating rooms and dental offices where nitrous oxide is utilized it is strongly recommended that as many of the following measures as possible should be employed in order to minimize the risk to dental staff. It is recognized that these precautions will minimize the exposure of both dentists and auxiliary staff and unborn children of female spouses of dental staff.

(1) Methods of reducing N₂O in the breathing zone of the dentist and chairside dental auxiliary staff to the lowest reasonable achievable concentrations include:

(a) Performing preventative maintenance of anaesthesia equipment at least semi-annually. A permanent log-book should be maintained as a reference and a record that regular servicing has been carried out.

(1) Testing the equipment for leakage by simple test procedures:

High Pressure System - Monthly
Low Pressure System - Weekly

(2) Using scavenging equipment, in particular, scavenging nasal hoods attached to a vacuum system.

(3) Venting of vacuum systems employed in scavenging devices to the outside of the building. Care must be taken to employ vacuum motors that are suitable for evacuating air with high concentrations of oxygen and nitrous oxide to prevent the danger of fire.

(4) Using air-sweep fans to reduce concentration of nitrous oxide in the immediate vicinity of the patient's face. Although this measure is not as satisfactory as removing nitrous oxide from the office environment via scavenging systems, it is a reasonable adjunct to those systems, particularly when efforts have been otherwise unsuccessful in reducing nitrous oxide levels in the operating zone to maximum acceptable levels.

(5) Air monitoring programs should be adopted to prove the effectiveness of the control measures. Besides initial monitoring of new systems or upon adoption of measures to improve nitrous oxide pollution control, regular monitoring should be carried out at least yearly and measures taken to find and correct reasons for levels of nitrous oxide that are higher than recommended or desirable.
(2) Although the specific air monitoring program utilized in any specific instance will be dependent on the expertise and equipment available in that particular locality, the following guidelines should be adopted wherever possible.

Rural dentists may be able to make arrangements through their local hospital to have their offices monitored through the same monitoring service as the hospital.

Operating suites should be monitored with a continuous nitrous oxide analyzer. A less desirable alternative is gas analysis by mail order.

Working samples should be obtained with the breathing zone of the dentist (defined as a frontal area within 15.25 cm to 25.5 cm of his nose). The shoulder is usually a satisfactory sampling site.

Sampling is carried out when the nitrous oxide flow meter is turned on and discontinued when the nitrous oxide is turned off.

A total sampling time of one hour should be utilized and it is beneficial to include several consecutive procedures.

It is desirable that levels of nitrous oxide not exceed 50 ppm.

However, it should be noted that levels as low as 10 ppm can be achieved with modern scavenging equipment and judicious care to minimize loss of nitrous oxide to the office atmosphere through leakage or carelessness.

The goal should be to obtain the lowest levels possible.

Consultation with persons qualified and experienced in medical gas systems should be sought when establishing a new system and particularly when consistently high levels of nitrous oxide are detected.

(3) Dentists should discriminate in their choice of equipment, both for administration of nitrous oxide sedation and for scavenging nitrous oxide waste. Not all equipment offered for sale is equally safe and effective. Procedure-dependent devices are apt to be less effective than devices which are procedure-independent (such as scavenging equipment).

(4) Suppliers of nitrous oxide delivery systems and scavenging equipment should be able to provide the dentist with documentation (that should be retained by the dentist for future reference) as to patient safety and effectiveness in minimizing nitrous oxide inhaled by dental personnel.

(5) Dentists employing nitrous oxide sedation in their offices have a responsibility to make all personnel working in their offices aware of the potential dangers of chronic exposure to nitrous oxide.
In particular, female personnel of child-bearing age should be aware of the particular problems related to spontaneous abortion and still-birth. Although these dangers appear greater during the time of pregnancy, exposure prior to pregnancy appears to be a very significant factor.

Furthermore, male personnel should be made aware that their exposure to nitrous oxide may result in similar problems of pregnancy for their spouses.

It may be emphasized by the dentist that adequate control of pollution factors reduces the risks to near nil.

(6) Dentists employing nitrous oxide in their practices should take reasonable precautions to prevent the unauthorized use of nitrous oxide for recreational purposes by office staff and other individuals with access to the office and equipment.

Furthermore, office personnel should be made aware of the potential dangers of abuse of nitrous oxide.

References

(2) "Control of Occupational Exposure to N₂O in the Dental Operatory", National Institute for Occupational Safety and Health, Cincinnati, Ohio, 45202, 1977


(4) "Guidelines for Teaching the Comprehensive Control of Pain and Anxiety in Dentistry", ADA Council on Dental Education, 1984

Definitions

**High Pressure Systems**: are systems or portions of systems wherein oxygen and nitrous oxide are transferred from a central supply via piping without pressure reduction. This type of arrangement entails specific plumbing requirements for purposes of safety.

**Low Pressure Systems**: are systems or portions of systems in which the oxygen and nitrous oxide are transferred at a low, standardized pressure (usually in the range of 241.29 to 344.70 KPA). Pressure reduction is accomplished by means of a pressure reducing valve. Most commonly, pressure reducing valves are installed right at the central supply tanks and therefore less stringent plumbing requirements are necessary. For instance, flexible tubing may be employed.

**APPLICATION TO THE MANITOBA DENTAL ASSOCIATION FOR IN-OFFICE ANAESTHESIA AUDIT**

(1) Modality to be used in-office (please check)
(4) Description of services to be provided under anaesthesia (please list)

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
(5) Practise Information:

Office Name: ____________________________________
Address: ____________________________________
Phone Number: ____________________________________

I (we) hereby request the Manitoba Dental Association to perform an in-office anaesthesia audit:

Applicant(s) / Practitioner(s) In Office:

Name (please print)       Signature
1. _________________________     ____________________
2. _________________________     ____________________
3. _________________________     ____________________
4. _________________________     ____________________

Date: _________________________

RETURN TO: MANITOBA DENTAL ASSOCIATION
103-698 Corydon Avenue
Winnipeg, Manitoba
R3M 0X9
Bylaw 27-89 is hereby repealed.

DONE and PASSED by the Board of Directors of the Manitoba Dental Association at Winnipeg, Manitoba this 26th day of January, 1994.

__________________________________
President

__________________________________
Secretary

This Bylaw will be effective on the ______________ day of ______________, _____ unless ten Members request in writing its ratification at a general Meeting of the Association (Section 43(3) of the Dental Association Act). (1)