Guidelines for Sedation in the Dental Office
(September 1997)
PREAMBLE

These guidelines are to be considered the minimum standard of practice acceptable to the Council of the College of Dental Surgeons of Saskatchewan for the use of any sedative technique for the purpose of facilitating treatment to the advantage of both the patient and the dentist. For convenience in organizing these guidelines, Sedation is divided into three categories:

- Mild Sedation
- Moderate Sedation
- Deep Sedation

These guidelines do not address the use, in the dental environment, of General Anaesthesia which is defined as the induced, continuous, controlled state of unconsciousness accompanied by a loss of protective reflexes including the inability to independently maintain an adequate airway and respond purposefully to physical stimulation or verbal command. Also, not addressed are the use of other modalities which are outside the scope of these guidelines including hypnosis, acupuncture and electro-analgesia.

For the purpose of interpreting these guidelines it should be noted that must implies mandatory or an imperative; should implies highly desirable or a recommendation; may implies some freedom or liberty in terms of following a suggested guideline.

GENERAL GUIDELINES

Each dentist must register with the College of Dental Surgeons of Saskatchewan his or her intended use of sedative procedures and in which categories (i.e. Mild Sedation, Moderate Sedation, Deep Sedation). The acceptance of this registration by the College will be subject to the dentist possessing adequate training, a suitable environment and appropriate facilities, including equipment, for the use of the proposed technique(s). This registration must be renewed annually. Although individual dentists training may vary, the adequacy of training for the purpose of administering sedation will be determined by the College of Dental Surgeons of Saskatchewan based upon published guidelines for educational requirements as well as accepted regional standards.

It is expected that every dentist practising in this jurisdiction who uses any sedative technique will be cognizant of the aforementioned guidelines and practice accordingly. It is also expected that the dentist will keep his or her training up-to-date and will perform the sedation procedures, for which he or she is trained, with sufficient frequency on a continual basis so as to maintain the needed skills as well as retain the necessary co-ordination between dentist and staff. Only a qualified dentist or licensed registered nurse under his supervision may administer parenteral drugs.

The dentist must be familiar with the diagnosis and treatment of all potential complications and, above all, how to prevent them. Appropriate emergency facilities (i.e. equipment and drugs) must be on hand and the dentist familiar with their use. It is understood that all equipment will be maintained functional, batteries fresh and drugs not out-of-date.

A key aspect to managing potential complications is the knowledge and physical skills of the effective administration of Cardio-Pulmonary Resuscitation as recommended by the Heart and Stroke Foundation of Canada. At the minimum every dentist should be certified in Basic Life Support. Certification in Advanced Life Support should also be considered especially where deeper sedation techniques will be employed. It is also strongly recommended that all attending auxiliary staff (i.e. those directly involved with the delivery of patient care) should be certified in Basic Life Support. Most desirable would be to have all staff certified in Basic Life Support with a pre-organized plan for the management of an emergency situation so that all aspects of management of the emergency can be dealt with effectively and efficiently. In order to ensure that an acceptable standard of care is being maintained, periodic peer review may be undertaken.

It is the responsibility of the dentist to ensure that every patient must be suitably fit from a medical standpoint, for the level of sedation planned, before a procedure involving sedation is undertaken. The Classification of Physical Status of the American Society of Anesthesiologists (A.S.A.) is a useful starting point in making this assessment.

American Society of Anesthesiologists (A.S.A.) Physical Status Classification:

I A normal healthy patient.

II A patient with mild systemic disease.
III A patient with severe systemic disease limiting activity but NOT INCAPACITATING.
IV A patient with INCAPACITATING systemic disease that is a constant threat to life.
V A moribund patient not expected to live with or without an operation.

There must be a legitimate indication for the use of sedation. The dentist must be aware of any medications or other depressant agents the patient uses and the possible effects they might have when a sedative is used concomitantly. The patient (parent or guardian) must understand the risks, side effects and potential complications as well as benefits, so that an informed consent to utilize the proposed sedation technique may be given. The dentist must ensure that the patient was given and has followed appropriate pre-sedation instructions. Since sedatives can affect the patients memory, verbal and written post-operative instructions should be provided to the patient and to the patients escort when one is indicated. Complete, permanent records must be kept on each case including pre-operative assessment, details of the sedative procedure, notation of vital signs (including pulse, respiratory rate and blood pressure), condition of the patient upon discharge and any other significant observations.

Basic equipment for measurement of a patients vital signs must be present and functional in each office. This should include sphygmomanometer, stethoscope, and timepiece able to count seconds. Depending on the level of sedation employed, additional monitoring equipment such as a pulse oximeter and cardiac monitor may also be appropriate. It is the dentistÕs responsibility to ensure that all equipment is properly maintained and that any required servicing is completed correctly according to manufacturers specifications. The dentist must be prepared in case of possible equipment failure such as might occur with loss of power. Back-up facilities should include spare light, alternate source of oxygen, alternative suction, spare batteries and any other item(s) appropriate to the specific office. The recovery area must have both oxygen and adequate suction available.

Another person, such as a dental assistant, should always be present in addition to the dentist during the course of a sedative procedure. Constant observation of the patient and monitoring of appropriate vital signs are necessary beginning pre-operatively until the patient has sufficiently recovered and is co-operative and responsive with stable vital signs and an adequate airway as verified by the dentist or registered nurse trained in recovery care. The level of supervision and length of time until a patient is deemed ready to be discharged will depend on the depth of sedation, selection of drugs employed, occurrence of side effects or complications, and rate of return of stable vital signs and appropriate level of consciousness. The dentist and his or her staff must be familiar with sterile technique as it applies to the sedative procedure(s) in use. Barrier devices should be present in the office as might be needed for the safe implementation of resuscitative procedures. Controlled drugs must be stored securely and their use recorded. Contaminated and sharp wastes must be discarded in an appropriate fashion.

GUIDELINES FOR THE USE OF MILD SEDATION

Definition:
Mild Sedation is the administration of pharmaco-active agents for the purpose of managing mild to moderate apprehension in a dental patient through mood alteration but, without the loss of consciousness or any protective reflexes. The patient is able to independently and continuously maintain an adequate airway and easily responds to physical stimulation and is able to communicate verbally.

Common routes of administration of mild sedatives include the inhalation route (e.g. Nitrous Oxide / Oxygen) and the oral route. Combinations of one technique with another or with other drugs or substances that the patient might be using may result in unexpected deeper sedation than intended.

Education:
The dentist who will use mild sedation must be able to show that he or she has sufficient knowledge and understanding of the the proposed technique and that this is acceptable to the College of Dental Surgeons of Saskatchewan. Such background preparation may have been acquired during undergraduate or graduate training or other postgraduate courses as may be given from time to time in this or other jurisdictions. This background preparation must have included both didactic and practical experience and must be kept up to date. The dentist must have thorough knowledge of the sedative agent(s) he or she will use including actions, interactions, side effects, potential complications and how to manage these.

He or she must be able to do an adequate assessment of the medical and psychological status of the patient consistent with a good standard of care and be able to determine that the patient is an appropriate candidate for a mild sedative technique. He or she must be familiar with an acceptable means of administration of the sedative agent and the monitoring of a patients

basic vital signs.

The dentist must be certified in Basic Life Support within the last year according to the guidelines of The Heart and Stroke Foundation of Canada. The dentistÕs staff must also have sufficient knowledge of the sedation technique so as not to compromise the safety of the patient. They should also be certified in Basic Life Support within the last year according to the guidelines of The Heart and Stroke Foundation of Canada.

Equipment:
The dentist must possess and be familiar with the use of the necessary equipment for the safe administration of the sedative agent(s). He or she must also possess and be familiar with the use of appropriate emergency facilities in case of side effects or complications. These emergency facilities should include:

- a convenient source of Oxygen
- a face mask which fits the patient
- a means of providing Oxygen under positive pressure to the patient
- suitable oro-pharyngeal airways to assist in airway maintenance
- any specific pharmacologic antagonist available to the sedative agent(s) in use including the means for administration

Specific to the use of Nitrous Oxide / Oxygen: The delivery system for Nitrous Oxide and Oxygen must function as it was originally designed including all built-in fail safe mechanisms. It must be able to deliver at least 30% Oxygen at all times. The dentist is responsible to ensure that the gas delivery system has been installed correctly. Service records must be maintained. Prior to starting a case the dentist should ensure that there are sufficient gases to safely complete a case including possible complications. A functional scavenging system must be employed for the safety of attending personnel. An auxiliary person, capable of safely monitoring the patient or, preferably, the dentist must be in the room with the patient and in control at all times during Nitrous Oxide / Oxygen administration. The dentist must confirm that the patient hasn't taken any other medication or substance which might vary the effect of the Nitrous Oxide / Oxygen sedation.

Other Responsibilities:
The dentist must provide adequate place and time for supervised patient recovery following the administration of a sedative agent. The patient must be given appropriate post-operative instructions including when he or she may undertake to operate machinery such as driving a vehicle. Arrangements must be made for a responsible adult escort for the patient when appropriate.

The dentist's records must show the evaluation of the patient including vital signs, agent(s) used, route and time of administration, dose(s), patient's reaction, side effects and complications, any other measures undertaken, status of the patient when discharged.

GUIDELINES FOR THE USE OF MODERATE SEDATION

Definition:
Moderate Sedation is the administration of pharmaco-active agents for the purpose of managing moderate apprehension in a dental patient as well as assist the patient to settle comfortably in a dental chair thus allowing completion of what may be delicate, painful or prolonged dental procedure. Although there will be a depressed level of consciousness, the patient will retain, at all times, the ability to independently and continuously maintain an adequate airway and will respond appropriately to physical stimulation and verbal command.

Common routes of administration of moderate sedation include the intramuscular and intravenous routes; although, moderate sedation can also be achieved by the oral or inhalation route. Combinations of one technique with another or with other drugs or substances that the patient might be using may result in unexpected deeper sedation than intended.

Education:
The dentist who will use moderate sedation must be able to show that he or she has sufficient knowledge and understanding of the proposed technique and that this is acceptable to the College of Dental Surgeons of Saskatchewan. Such background preparation may have been acquired during graduate training or, other accepted postgraduate courses as may be given in this or other jurisdictions. This background preparation must have included both didactic and practical experience and must be kept up to date. The dentist must have thorough knowledge of the sedative agent(s) he or she will use including actions, interactions, side effects, potential complications and their management.

He or she must be able to do an adequate assessment of the medical and psychological status of the patient consistent with a good standard of care and to determine that the patient is an appropriate candidate for a moderate sedative technique. The dentist must be familiar with an acceptable means of drug administration and the monitoring of a patient's vital signs.

The dentist and his or her attending staff must be certified in Basic Life Support within the last year according to the guidelines of The Heart and Stroke Foundation of Canada. They must be familiar with the proposed sedative technique in order to ensure maximum safety for the patient. They must have in place a plan for managing complications in the event that one occurs and they should have considered the means of safe transport of the patient to a medical facility should this become necessary.

Equipment:
The dentist must possess and be familiar with the use of the necessary equipment for the safe administration of the sedative agent(s). Facilities must be present to monitor the patient's vital signs including oxygen concentration in the blood. A supplemental Oxygen supply must be available. The dentist must also possess and be familiar with the use of appropriate emergency facilities, including parenteral administration of appropriate drugs, in case of side effects or complications.

These emergency facilities must include:
- a convenient source of Oxygen
- a face mask which fits the patient
- a means of providing Oxygen under positive pressure to the patient
- oro-pharyngeal airways to assist in airway maintenance
- suction equipment suitable for pharyngeal evacuation
- facilities for endotracheal intubation should be considered
- facilities for intravenous fluid replacement should be considered

Emergency drugs should include:
- epinephrine
- an antiarrythmic
- an anticholinergic
- an antihistamine
- a bronchodilator
- a coronary artery vasodilator
- a vasopressor
- any specific pharmacologic antagonist available to the sedative agent(s) in use including the means for administration

Other Responsibilities:
Only patients classified as A.S.A. I or II should be considered for moderate sedation. (Class III patients may be considered if the patient's medical well-being is not expected to be significantly adversely affected by the contemplated procedure.) Medical consultations should be sought and laboratory tests ordered when appropriate. The dentist must ensure that the patient has not ingested solid foods for at least six hours and clear fluids for at least three hours (except as may be necessary to take essential medications) prior to the administration of a sedative agent.

The dentist must provide adequate place and time for supervised patient recovery following the administration of a sedative agent. The patient must be given appropriate post-operative instructions including not to operate machinery such as driving a vehicle that day. Arrangements must also be in place for a responsible adult to escort the patient home. The patient should not be discharged until co-operative and alert with stable vital signs and an adequate airway.

The dentist's records must show the evaluation of the patient including preoperative vital signs, agent(s) used, route and time of administration, dose(s), intra-operative vital signs including oxygen saturation of the blood, patient's reaction to the sedation, side effects and complications, any other measures undertaken, status of the patient when discharged including post-operative vital signs, and person escorting patient home.

GUIDELINES FOR THE USE OF DEEP SEDATION

Definition: Deep Sedation is the administration of pharmaco-active agents for the purpose of managing major apprehension in a dental patient especially if a difficult or painful dental procedure is anticipated or the degree of

apprehension causes that patient to be otherwise unmanageable without a General Anaesthetic. Deep sedation leads to a controlled state of depressed consciousness which may be accompanied by a partial loss of protective reflexes and the inability to respond appropriately to verbal command.The intravenous route is the usual route of administration of deep sedation; although, a combination of routes may be employed.

Education:
The dentist who will use deep sedation must be able to show that he or she has sufficient knowledge and understanding of the the proposed technique and that this is acceptable to the College of Dental Surgeons of Saskatchewan. Such background training may have been acquired during graduate training, such as for the specialty of Oral and Maxillofacial Surgery, or, other accepted formal postgraduate courses as may be given in this or other jurisdictions. This background preparation must have included both didactic and practical experience and must be kept up to date. The dentist must have thorough knowledge of the sedative agent(s) he or she will use including actions, interactions, side effects, potential complications and their management.

He or she must be able to do an adequate assessment of the medical and psychological status of the patient in keeping with good standard of care and to determine that the patient is an appropriate candidate for a deep sedative technique. The dentist must be familiar and competent with the intravenous route of administration and the monitoring of a patient's vital signs to ensure maximum safety of the patient.

The dentist and his or her attending staff must be certified in Basic Life Support within the last year according to the guidelines of The Heart and Stroke Foundation of Canada. They must be familiar with the proposed sedative technique in order to ensure maximum safety for the patient. They must have in place a plan for managing complications in the event that one occurs as well as the means of safe transport of the patient to a medical facility should that become necessary.

The dentist should be certified or familiar with Advanced Cardiac Life Support according to the guidelines of The Heart and Stroke Foundation of Canada. The dentist should consider having an additional auxiliary person who is not directly involved with the delivery of dental care for that patient and who has the appropriate knowledge to assist with the monitoring of the patient's vital signs and supervising the patient's recovery.

Equipment: The dentist must possess and be familiar with the use of the necessary equipment for the safe administration of the sedative agent(s). Facilities must be present to monitor the patient's vital signs including oxygen saturation of the blood. A supplemental Oxygen supply must be available for administration throughout the sedative procedure. The dentist must also possess and be familiar with the use of appropriate emergency facilities, including parenteral administration of appropriate drugs, in case of side effects or complications.

These emergency facilities must include:
- a convenient source of Oxygen
- a face mask which fits the patient
- a means of providing Oxygen under positive pressure to the patient
- oro-pharyngeal airways to assist in airway maintenance
- facilities for endotracheal intubation
- suction equipment suitable for pharyngeal evacuation
- a portable cardiac monitor and defibrillator
- facilities for intravenous fluid replacement

Emergency drugs should include:
- epinephrine
- an antiarrythmic
- an anticholinergic
- an antihistamine
- a bronchodilator
- a coronary artery vasodilator
- a vasopressor
- succinyl choline
- any specific pharmacologic antagonist available to the sedative agent(s) in use including the means for administration

Other Responsibilities:

Only patients classified as A.S.A. I or II should be considered for deep sedation. (Class III patients may be considered if the patient's medical well-being is not expected to be significantly adversely affected by the contemplated procedure.) Medical consultations should be sought and laboratory tests ordered when appropriate. The dentist must ensure that the patient has not ingested solid foods for at least six hours and clear fluids for at least three hours (except as may be necessary to take essential medications) prior to the administration of a sedative agent.

The dentist must provide adequate place and time for supervised patient recovery following the use of a sedative agent. The patient must be given appropriate post-operative instructions including not to operate machinery such as driving a vehicle for the following 24 hours. Arrangements must also be in place for a responsible adult to escort the patient home. The patient should not be discharged until return of all protective reflexes has been assured and the patient is co-operative and alert with stable vital signs and an adequate airway.

The dentist's records must show the evaluation of the patient including preoperative vital signs, agent(s) used, route and time of administration, dose(s), intra-operative vital signs including oxygen saturation of the blood, patient's reaction to the sedation, side effects and complications, any other measures undertaken, status of the patient when discharged including postoperative vital signs and person escorting patient home.

CONCLUSION

These guidelines cannot address every eventuality but are intended to assist dentists in maintaining an acceptable standard of patient care in this jurisdiction. It is ultimately the dentist who must ensure that he or she is sufficiently trained, equipped and otherwise prepared in all respects in order to provide safe and competent care in keeping with an acceptable standard of care for each patient. The College of Dental Surgeons of Saskatchewan may, from time to time, further clarify, augment or upgrade these guidelines.

CDSS GUIDELINES FOR USE OF NITROUS OXIDE

appendix to the CDSS Sedation Standard

The following information is to be used as a resource for CDSS Members using or contemplating the use of nitrous oxide in their facility

The Saskatchewan Occupational Health and Safety Regulation 476 Anaesthetic Gases

Where workers are required to handle or use anaesthetic gases and vapours or are likely to be exposed to anaesthetic gases and vapours, an employer shall:

(a) develop safe work practices and procedures to eliminate or reduce the concentration of anaesthetic gases and vapours in the air of the room during the administration of the anaesthetic gases;

(b) train workers in the safe work practices and procedures developed ursuant to clause (a) and ensure that the workers and self-employed persons use those safe work practices and procedures;

(c) ensure that all anaesthetic gas hoses, connections, tubing, bags and associated equipment are inspected for leakage before each use and at least weekly;

(d) ensure that any room where anaesthetic gases are administered is,where reasonably practicable, ventilated at a rate of 15 air changes per hour;

(e) on or before January 1, 1998, install an effective waste anaesthetic gas scavenging system to collect, remove and dispose of waste anaesthetic gases and vapours;

(f) except in birthing rooms where anaesthetic gas is self-administered, ensure that leakage from a waste anaesthetic gas scavenging system installed pursuant to clause (e) is less than 100 millilitres per minute when tested according to an approved standard; and

(g) ensure that the waste anaesthetic gas scavenging system and the equipment used to administer anaesthetic gases are maintained.

Saskatchewan Government Recommended Resources:

- NIOSH
  Controlling Exposure to Nitrous Oxide During Anesthetic Administration
  http://www.cdc.gov/niosh/docs/94-100/

- NIOSH - CDC
  Technical Report Control of Nitrous Oxide in Dental Operatories
  http://www.cdc.gov/niosh/docs/94-129/pdfs/94-129.pdf

- OSHA
  Occupational Safety and Health Guidelines for Nitrous Oxide
  http://www.osha.gov/SLTC/healthguidelines/nitrousoxide/recognition.html

American Dental Association Resource:

- **Nitrous Oxide – American Dental Association – Oral Health Topics Nitrous Oxide**
  1. **Dentist Version**
  2. **Patient Version**

  http://www.ada.org/5289.aspx