SEDATION AND GENERAL ANESTHESIA STANDARD

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The College of Dental Surgeons of Saskatchewan

TABLE OF CONTENTS

NOTE TO READER

Effective January 1, 2023, all dentists administering any form of sedation, including nitrous oxide and oxygen sedation and oral minimal sedation, must have authorization from the CDSS to do so. In addition, all facilities where any sedation or general anesthesia is administered for the provision of any DDA s23 Authorized Practice, will be required to have a Sedation Permit and will be subject to random onsite inspections and evaluation by the CDSS.

INTRODUCTION

1. The Standards of Practice of the College of Dental Surgeons of Saskatchewan describe the minimum requirements that all dentists must meet in a particular area of clinical practice to maintain patient safety. On a regular basis, the CDSS reviews and revises Standards to address any changes that are required. We urge all dentists to achieve excellence in every aspect of their work. They must ensure they are always up to date with the latest knowledge.

2. Sedation and general anesthesia are often beneficial and sometimes essential for our patients. This Standard is one of the most important documents we have because it literally concerns matters of life or death.

3. The use of sedation and general anesthesia carries an element of risk. Mitigating this risk requires advanced training, planning, and assessment during administration. These extra levels of care and diligence are needed before, during and after a dental procedure that requires sedation or general anesthesia.

4. The CDSS requires that a properly trained sedation or anesthetic team is in place to administer and monitor any level of sedation including deeper levels of sedation and general anesthesia. Each member of the team must be trained for specific duties. A team composed of a minimum of three individuals in three different roles must be easily accessible at all times when general anesthesia, deep sedation or parenteral moderate sedation is administered. Concerns for patient safety are always the first priority and the team must continuously monitor, assess and address how their patient is responding to sedation or general anesthesia.

5. Certain patient groups need greater attention; children, the elderly and medically compromised people face particular challenges when receiving sedation or general anesthesia. Children under 12 years of age require even more diligent monitoring; they have reduced physical reserves and impairment may occur rapidly. In particular, it can be difficult to diagnose hypoventilation and airway obstruction quickly. This necessitates the need for advanced training, knowledge, and skillsets to safely and effectively use sedation in these patient groups.

6. A key goal with this Standard is to identify what will provide patient safety with a wide enough margin to meet unforeseen circumstances and still ensure success. Safety is dependent on training, careful patient selection and preparation, monitoring, equipment, and emergency drugs, as well as continuing education on all of these elements.

7. This revision of the Standard on the Use of Sedation and General Anesthesia in Dental Practice sets enhanced requirements and higher standards throughout. The CDSS is committed to continuous improvement in every area of clinical practice. Recent advancements in training, technology and knowledge are represented in this version of the Standard. Future revision of the CDSS Sedation Standard must include input from oral and maxillofacial surgeons, pediatric dentists, and hospital trained dentists.

8. Properly equipped sedation and general anesthesia facilities are critical. The CDSS will record and monitor members who practice sedation and will record and monitor the clinics where sedation of any classification is practiced. A sedation QA manual must be part of the 'monitoring' program to ensure that all sedation and general anesthesia facilities in dentistry meet the required Standard.

9. Contravention of this or any Standard of the CDSS may be considered professional misconduct. Dentists employing any modality of sedation or general anesthesia must be familiar with its content, be appropriately trained and regulate their practices accordingly. It must be read in conjunction with the bylaws of the CDSS, which form part of this Standard.

USE OF SEDATION AND GENERAL ANESTHESIA IN DENTAL PRACTICE

10. Sedation or general anesthesia may be indicated to:

a. Treat the patient anxiety associated with Dental Treatment.
b. Treat patients below the age of reason.
c. Aid in traumatic or extensive dental procedures.
d. Enable treatment for patients who have cognitive impairment or motor dysfunction which prevents adequate dental treatment within reason.

11. These techniques are to be used when indicated, as an adjunct to appropriate non- pharmacological means of patient management. Sedation and general anesthesia are produced along a continuum, ranging from the relief of anxiety with little or no associated drowsiness (i.e., minimal sedation), up to and including a state of unconsciousness (i.e., general anesthesia).

DEFINITIONS:

12. **Minimal sedation** is a minimally depressed level of consciousness, produced by a pharmacological method that retains the patient's ability to independently and continuously maintain an airway and respond normally to tactile stimulation and verbal command. Although cognitive function and coordination may be modestly impaired, ventilatory and cardiovascular functions are unaffected.

13. **Moderate sedation** is a drug-induced depression of consciousness during which patients respond purposefully to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.

14. **Deep sedation** is a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.

15. **General anesthesia** is a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug- induced depression of neuromuscular function. Cardiovascular function may be impaired.

- See Appendix III - Characteristics of the Levels of Sedation and General Anesthesia.

USE OF SEDATION AND GENERAL ANESTHESIA IN DENTAL PRACTICE (CONTINUED)

16. It is not always possible to predict how an individual patient will respond and, at times, it can be difficult to precisely define the endpoint of one level of sedation and the starting point of a deeper level of sedation. Therefore, the drugs and techniques used for sedation must carry a margin of safety wide enough to render loss of consciousness highly unlikely. Practitioners intending to produce a given level of sedation must be able to diagnose and manage the physiological consequences (rescue) for patients whose level of sedation becomes deeper than initially intended. For all levels of sedation, the practitioner must have the training, skills, drugs, and equipment to identify and manage such an occurrence until either assistance arrives (e.g., emergency medical service) or the patient returns to the intended level of sedation without airway or cardiovascular complications.

17. This document is to be considered the minimum standard of practice acceptable to the Council of the College of Dental Surgeons of Saskatchewan (CDSS) for the use of any sedative technique for the purpose of facilitating appropriate dental care and treatment by individuals trained to do so. The standards apply to the administration of sedation in a non-hospital general dental or specialty dentistry practice. For the

purposes of this document, these standards are divided into the following categories:

A. General Standards for all modalities of sedation or general anesthesia
B. Specific standards for the following particular modalities
    a. Mild sedation
        i. Administration of Nitrous oxide and oxygen
        ii. Oral administration of a single sedative drug
    b. Moderate Sedation
        i. Oral administration of a single sedative drug with or without nitrous oxide and oxygen
        ii. Parental administration of a single sedative drugs (Intravenous, intramuscular, subcutaneous, submucosal, or intranasal) with or without nitrous oxide and oxygen
    c. Deep sedation
    d. General Anesthesia

18. 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 selected guideline.

GENERAL STANDARDS FOR ALL MODALITIES OF SEDATION OR GENERAL ANESTHESIA

PROFESSIONAL RESPONSIBILITIES

19. The following professional responsibilities apply to all modalities of sedation and general anesthesia:
    a. Successful completion of a qualified training program designed to produce competency in the specific modality of sedation or general anesthesia utilized is mandatory.
    b. The dental facility must comply with all applicable building codes, including fire safety, electrical and access requirements. The size and layout of the facility must be adequate for all procedures to be performed safely and provide for the safe evacuation of patients and staff in case of an emergency.
    c. The dental facility must be suitably staffed and equipped for the specific modality(ies) practiced as prescribed in this document.
    d. An adequate, clearly recorded current medical history, including present and past illnesses, hospital admissions, current medications and/or non-prescription drugs and/or herbal supplements, allergies (in particular to drugs), and a functional inquiry, along with an appropriate physical examination must be completed for each patient prior to the administration of any form of sedation or general anesthesia. For medically compromised patients, consultation with their physician may be indicated. This must form a permanent part of each patient's record, consistent in content with Appendix I. Additionally, the medical history must be reviewed for any changes at each sedation appointment. Any such changes should be documented in the permanent record.
    e. A determination of the patient's American Society of Anesthesiologists (ASA) Physical Status Classification (see Appendix II), as well as careful evaluation of any other factors which may affect his/her suitability for sedation or general anesthesia must be made prior to its administration. These findings will be used as a guide in determining the appropriate facility and technique used.
    f. In general, when it is indicated, the administration of sedation or general anesthesia in out-of-hospital dental facilities is most appropriate for patients who are ASA I and ASA II. Patients who are ASA III and/or present with other medical concerns (e.g., difficult airway) may not be acceptable for treatment by practitioners who are qualified to administer minimal and/or moderate sedation only. Such patients must be carefully assessed, and consideration should be given to referring them to a more appropriate setting.

g. Patients who are under 12 years of age are not acceptable for the administration of parenteral moderate sedation in out-of-hospital dental facilities, except by those practitioners who are qualified to administer deep sedation or general anesthesia (i.e., Specialties including OMFS and Pediatrics Dentists).
h. Patients who are under 3 years of age OR under 15 kilograms are not acceptable for the administration of oral sedation, with or without nitrous oxide and oxygen, except by those practitioners who have a CDSS sedation Permit to administer deep sedation or general anesthesia, including those practitioners who have completed a formal post-graduate program in pediatric dentistry or OMFS suitable for certification in the Province of Saskatchewan with appropriate skills for pediatric sedation and airway management.
i. Patients who are ASA IV and above are not acceptable for the administration of deep sedation or general anesthesia in out-of-hospital dental facilities. The administration of nitrous oxide and oxygen may be considered for these patients, if appropriate. Other modalities for minimal and moderate sedation may be considered only by those practitioners who are qualified to administer deep sedation or general anesthesia, including medical anesthesiologists.
j. Only the following persons may administer any sedative or general anesthetic agent in the dental setting for any DDA s25 authorized practice:
    i. An appropriately trained and credentialled dentist currently registered with the College of Dental Surgeons of Saskatchewan (CDSS).
    ii. An appropriately trained and credentialled physician currently registered with the College of Physicians and Surgeons of Saskatchewan (CPSS).
    iii. For the purpose of IV Sedation, a nurse currently registered with the College of Nurses of Saskatchewan in the general class in the RN category acting under the required order and the direct control and supervision of an appropriately trained and credentialled dentist or a physician, currently registered in Saskatchewan by the respective regulatory body; Licensed Practical Nurses (LPN) do not have the advanced level of knowledge required to administer direct IV push medication.
    iv. A respiratory therapist currently registered with the College of Respiratory Therapists of Saskatchewan acting under the required order and the direct control and supervision of an appropriately trained and credentialled dentist or a physician, currently registered in Saskatchewan by the respective regulatory body.
k. All dentists and dental office staff must be prepared to recognize and treat adverse responses using appropriate emergency equipment and appropriate and current drugs when necessary. All dentists and clinical staff should have the training and ability to perform basic life support (BLS) techniques. All dentists providing any level of sedation and/ or general anesthesia must maintain current BLS certification (CPR Level HCP). All dentists providing moderate or deep sedation and/or general anesthesia must maintain current Advanced Cardiovascular Life Support (ACLS) and airway support training as a minimum and all dental offices where such levels of sedation are provided must be equipped with an automated external defibrillator (AED). If moderate or deep sedation and/ or general anesthesia is being provided for children 12 and under, the Dentist must maintain a current Pediatric Advanced Life Support certification (PALS). Dentists should establish written protocols for emergency procedures and review them with their staff regularly. The following table outlines the six basic drugs that must be included in the emergency kit of every dental office.
l. All dental offices providing sedation and/or general anesthesia are required to have additional emergency drugs and armamentaria, as described in the sections dealing with specific modalities.

DRUG	INDICATION	INITIAL ADULT DOSE	RECOMMENDED CHILD DOSE
Oxygen*	Most medical emergencies	100% inhalation	100% inhalation
Epinephrine (at least 2 sources)**	Anaphylaxis	0.3-0.5 mg i.m.*** or 0.01-0.1 mg i.v.	0.01 mg/kg
	Asthmatic bronchospasm which is unresponsive to salbutamol	0.3-0.5 mg i.m.*** or 0.01-0.1 mg i.v.	0.01 mg/kg
	Cardiac arrest	1 mg i.v.	0.01 mg/kg
Nitroglycerin	Angina pectoris	0.3 mg or 0.4 mg sublingual	Not indicated
Diphenhydramine	Allergic reactions	50 mg i.m.*** or i.v.	1 mg/kg
Salbutamol inhalation aerosol	Asthmatic bronchospasm	2 puffs (100 micrograms/puff)	1 puff
ASA (non-enteric coated)	Acute Myocardial Infarction	160 to 325 mg	Not indicated

* *An E-size cylinder is required. The unit must be portable and have an appropriate regulator and flowmeter, as well as connectors, tubing and reservoir bag, to allow use of a full face mask for resuscitative ventilation.*

** *At least 2 sources of 1:1,000 epinephrine are required, such as 2 ampules, 2 auto-injectors or a combination of ampules and auto-injectors.* ***If children under 30 kg are treated and auto-injectors are used, the pediatric formulation is required.***

*** *The dose suggested for the i.m. route is also appropriate for sublingual injections.*

The total pediatric dose should not exceed the adult dose.

m. Dentists must take into account the maximum dose of local anesthetic that may be safely administered, especially for children, the elderly and the medically compromised. Whenever sedation or general anesthesia is used, the calculated maximum dose of local anesthetic may need to be further adjusted to provide a greater margin of safety.

n. Dentists using any of the sedation and/or general anesthesia techniques described in this document for their patients, including oral sedation and/ or nitrous oxide and oxygen - conscious sedation, must maintain their competence and are expected to include courses and/or other educational programs related to these modalities in their personal continuing dental education planning in order to do so. Such educational programs must include BLS, ACLS and PALS certification/recertification to maintain current dependent on the level of sedation provided. Dentists must satisfy the following continuous practice and CE requirements:

For minimal sedation	• a minimum of 5 cases must be performed per year; **and** • if patients under 12 years of age are treated, a minimum of 5 cases involving patients under 12 years of age must be performed per year
For oral moderate sedation	• a minimum of 6 hours of continuing education (or 6 CE points) related to oral moderate sedation must be completed per 3-year period*; **and** • a minimum of 5 cases** must be performed per year; **and** • if patients under 12 years of age are treated, a minimum of 5 cases involving patients under 12 years of age must be performed per year
For parenteral moderate sedation	• a minimum of 12 hours of continuing education (or 12 CE points) related to parenteral moderate sedation must be completed per 3-year period*; **and** • a minimum of 10 cases must be performed per year
For deep sedation and/ or general anesthesia	• a minimum of 12 hours of continuing education (or 12 CE points) related to deep sedation and/or general anesthesia must be completed per 3-year period*; **and** • a minimum of 10 cases must be performed per year; **and** • if patients under 12 years of age are treated, a minimum of 10 cases involving patients under 12 years of age must be performed per year

* *For the purposes of fulfilling this requirement, courses in the management of medical emergencies are accepted.*

** *For the purposes of fulfilling this requirement, minimal sedation cases are also accepted, provided that the cases are managed as if they are oral moderate sedation cases, including documentation of sedation records.*

o. In order to avoid allegations of sexual impropriety, an additional staff member should be present in the treatment room at all times whenever moderate/deep sedation or general anesthesia is used (i.e., if a male dentist is providing moderate sedation to a female patient, a female staff member must be present at all times in the operatory while the male dentist is present).

p. Dentists using sedative and/or general anesthetic agents should take reasonable precautions to prevent the unauthorized use/abuse of these substances for recreational purposes by office staff and other individuals with access to the office and equipment.

20. Preventive strategies must include the following:
    a. Institute an inventory of all narcotic and controlled drugs and substances.
    b. Keep narcotics and benzodiazepines in a locked storage cupboard, along with a drug log that accounts for the dispensing of all narcotic and controlled Drugs and substances.
    c. Keep careful control of blank prescription pads and NEVER pre-sign prescription sheets.
    d. Use staff training sessions and meetings to discuss the "Dangers of Drug and Substance Abuse" to remind staff of the safeguards and protocols in the office to prevent misuse of supplies, and to provide information about resources that are available to Dental Professionals and allied staff to assist with wellness issues through the CDSS.

CRITICAL EVENTS - REPORTABLE INCIDENTS

21. If a patient's response or an unanticipated event result in the need for transfer of the care of the patient to another provider, a non-Hospital surgical Facility or Hospital, it is a Critical Event- Reportable Incident. Such reportable incidents must be reported to the Registrar of the College of Dental

Surgeons of Saskatchewan (CDSS) in a timely manner, within 48 hours of the incident.

22. Critical Events / Reportable Incidents are incidents that occur related to sedation that create a substantial health risk to the patient and include:
    a. Incidents that required emergency interventions inside the office such as, but not limited to, cardiovascular collapse/failure where resuscitation occurred on site. If CPR is administered the patient should subsequently be transferred to a hospital.
    b. Transfers of the patient or the care of the patient to another care provider, non- hospital facility, medical facility, or hospital after sedation procedure.
    c. Deaths in office or after a sedation procedure within a reasonable period of time.
    d. Missing drugs are to be reported as a Critical Event - Reportable Incident.

23. A written report is required within 48 hours of the most responsible practitioner becoming aware of the event. The report must contain the following:
    a. Name, age, and sex of the person affected;
    b. Medical History of the person affected including ASA status;
    c. Name of witness(es) to the incident;
    d. Date and type of procedure (if applicable);
    e. Nature of the incident and treatment rendered;
    f. Analysis of reasons for the incident;
    g. Outcomes; and
    h. A copy of the full chart if requested by CDSS.

24. The CDSS will review the circumstances with the dentist. If necessary, the CDSS may immediately suspend the sedation practices on suspicion of continued risk.

25. Any time a reversal agent is given then it shall be logged in a logbook or on the sedation record and a copy to be provided to the CDSS upon request as needed. Reversal agents should not be used as a routine part of any sedation practice. However, practitioners should never hesitate to use a reversal agent if the patient situation dictates such that patient safety is never compromised.

SPECIFIC STANDARDS FOR PARTICULAR MODALITIES PART 1: CONSCIOUS SEDATION

DEFINITION

26. Conscious sedation is a minimally to moderately depressed level of consciousness that retains the patient's ability to independently and continuously maintain an airway and respond appropriately to physical stimulation and verbal command.

27. It is produced by a pharmacological or non-pharmacological method or a combination thereof. In dentistry, it is used to reinforce positive suggestion and reassurance in a way which allows dental treatment to be performed with minimal physiological and psychological stress and enhanced physical comfort.

28. It must be emphasized that sedation and general anesthesia are produced along a continuum, ranging from the relief of anxiety with little or no associated drowsiness (i.e., anxiolysis), up to and including a state of unconsciousness (i.e., general anesthesia). It is not always possible to predict how an individual patient will respond and, at times, it can be difficult to precisely define the endpoint of conscious sedation and the starting points of deep sedation and general anesthesia. Therefore, the drugs and techniques used for conscious sedation must carry a margin of safety wide enough to render loss of consciousness highly unlikely.

LEVELS OF CONSCIOUS SEDATION – MINIMAL AND MODERATE SEDATION

29. Conscious sedation may be further divided into Minimal Sedation and Moderate Sedation, as defined by the American Dental Association as summarized in Appendix III.

30. **Minimal sedation** the patient responds normally to tactile stimulation and verbal commands. Although cognitive function and coordination may be modestly impaired, ventilatory and cardiovascular functions are unaffected. Minimal sedation is usually

accomplished by the following modalities:
A. Administration of nitrous oxide and oxygen
B. Oral administration of a single sedative drug

31. **Moderate sedation** the patient responds purposefully to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate.

32. Cardiovascular function is usually maintained. Moderate sedation is usually accomplished by the following modalities:
    A. Oral administration of a sedative drug, with or without nitrous oxide and oxygen
    B. Parenteral administration of a single sedative drug (intravenous, intramuscular, subcutaneous, submucosal, or intranasal.), with or without nitrous oxide and oxygen.

PROFESSIONAL RESPONSIBILITIES FOR CONSCIOUS SEDATION - MINIMAL AND MODERATE LEVELS

33. In addition to the General Standards listed previously, the following professional responsibilities apply to all modalities of minimal and moderate conscious sedation:
    a. Successful completion of a training program designed to produce competency in the use of the specific modality of minimal or moderate sedation, including indications, contraindications, patient evaluation, patient selection, pharmacology of relevant drugs, and management of potential adverse reactions, is mandatory. The training program must be obtained from one or more of the following sources:
        i. Faculties of Dentistry undergraduate and postgraduate programs, approved by the CDSS.
        ii. College of Dental Surgeons of Saskatchewan (CDSS) OR University of Saskatchewan Faculty of Dentistry continuing education programs approved by the CDSS.
        iii. other continuing education courses approved by the CDSS which follow the general principle that they must be:
            a) Organized and taught by dentists certified to administer anesthesia and sedation as they apply to dentistry, supplemented as necessary by persons experienced in the technique being taught.
            b) Held in a properly equipped dental environment which will permit the candidates to utilize the techniques being taught on patients during dental treatment.
            c) Followed by a recorded assessment of the competence of the candidates.
    b. Dentists whose training does not exceed that described as necessary for the administration of conscious sedation are cautioned not to exceed that level of depression defined above. Single drug choice in a carefully considered dose is a prudent approach to conscious sedation. Significant approved additional training, as outlined elsewhere in this document, is required if more than one drug is to be used.
    c. Should the administration of any drug produce depression beyond that of conscious sedation, the dental procedures should be halted. Appropriate support procedures must be administered until the level of depression is no longer beyond that of the desired level of sedation, or until additional emergency assistance is affected as required.
    d. Sedation techniques require the patient to be discharged to the care of a responsible adult. The only situation in which a dentist may exercise discretion as to whether a patient may be discharged unaccompanied is that in which nitrous oxide and oxygen sedation alone is the technique used. All patients must be specifically assessed and documented for fitness for discharge using a medically acceptable criteria (such as Modified Aldrete Scoring System) as described in Appendix X.

MINIMAL SEDATION:

34. Minimal Sedation (Anxiolysis): a drug induced state during which patients respond normally to verbal commands. Although cognitive function and coordination may be impaired, ventilatory and

cardiovascular functions are unaffected.

A. Administration of nitrous oxide and oxygen
B. Appropriately dosed oral administration of a single sedative drug

35. In all cases where the intention is to achieve minimal sedation, including the oral administration of a single sedative drug, the dentist must adhere to the standards for minimal sedation. This includes the professional responsibilities of registering with CDSS and obtaining a CDSS sedation permit for each facility where sedation will be administered.

ADMINISTRATION OF NITROUS OXIDE AND OXYGEN

36. In addition to the General Guidelines and professional responsibilities listed above, the following professional responsibilities apply when nitrous oxide and oxygen conscious sedation is being administered.

37. **Professional Responsibilities**
    a. Appropriate training in the use of nitrous oxide and oxygen conscious sedation is mandatory.

38. **Requirements**
    a. An intensive course in conscious sedation is a program designed to meet the needs of dentists who must become knowledgeable and proficient in the safe and effective use of nitrous oxide and oxygen inhalation.
    b. The course is to be taught by dentists with formal training and experience in anesthesia and sedation as they apply to dentistry.
    c. The course is to be held in a properly equipped dental office or institution in order to permit a significant portion of such a course to deal with candidate participation and utilization of the techniques on patients. The course director(s) must assess the individual's competency upon successful completion of such training by a meaningful examination.
    d. All dentists administering nitrous oxide and oxygen must be registered with the CDSS and authorized to do so.
    e. All facilities where nitrous oxide and oxygen is administered are subject to random on- site inspections and evaluation by the CDSS.

39. **Equipment and Procedure**
    a. Gas delivery systems used for the administration of nitrous oxide and oxygen:
        i. Must have a fail-safe mechanism such that it will not deliver an oxygen concentration of less than 30% in the delivered gas mixture.
        ii. Must have pipeline inlet fittings, or pin-indexing, that do not permit interchange of connections with oxygen and nitrous oxide.
        iii. Must be checked regularly for functional integrity by appropriately trained personnel; must function reliably and accurately; and receive appropriate care and maintenance according to manufacturer's instructions. A written record of this maintenance/ servicing must be kept on file for review by CDSS as required.
        iv. Must have a reserve supply of oxygen that is ready for immediate use. For a portable gas delivery system, the reserve supply of oxygen must be connected to the system (i.e., a "4-yoke" system). For a centrally plumbed gas delivery system, two oxygen cylinders must be connected to the system at all times.
        v. Must be equipped with a scavenging system installed per manufacturer's specifications. In addition to installing a scavenging system, dentists must ensure adequate ventilation of the facility to minimize occupational exposure to nitrous oxide and maintain acceptable air quality.
        vi. Nitrous oxide in the dental operatory should also be periodically evaluated by an appropriate means if there is suspicion of elevated ambient levels.
        vii. Use of a pulse oximeter may be used to monitor oxygen saturation levels in the blood during nitrous oxide administration. However, access to a pulse oximeter must be available in the office if needed in case of adverse event.
        viii. If there is only a single provider then a pulse oximetry must be used as a safety factor.
    b. In addition to the gas delivery system, an emergency supply of oxygen is required (i.e., a "wheel-out"). This should be a portable "E" size cylinder attached with appropriate regulator and flowmeter, as well as connectors, tubing and reservoir bag which allow use of a full face mask for resuscitative ventilation with 100% oxygen.

c. Nitrous oxide and oxygen sedation must be administered by:
   i. an appropriately trained dentist OR
   ii. an appropriately trained registered nurse, licensed respiratory therapist, or licensed practical nurse under the order of an appropriately trained dentist, provided that:
      a) an appropriately trained dentist is present at all times in the office and immediately available in the event of an emergency;
      b) Appropriate dosage levels have been previously determined and recorded by the dentist in the patient record.
d. Patients receiving nitrous oxide and oxygen sedation must be supervised by an appropriately trained dentist, or an appropriately trained registered nurse, registered respiratory therapist or licensed practical nurse, and must never be left unmonitored during administration.
   i. Supervised = oversight of procedures and sedation/technique including oversight of monitoring
   ii. Monitored = directly monitoring of patient's vital signs and level of sedation
e. Patients must be monitored by an appropriately trained dentist, or an appropriately trained registered nurse, registered respiratory therapist, licensed practical nurse, or a registered dental professional where vital sign monitoring is within their scope of practice under the supervision of a dentist, by direct and continuous clinical observation for level of consciousness and assessment of vital signs which may include heart rate, blood pressure, and respiration preoperatively, intraoperatively and postoperatively, as necessary.
f. The Practitioner must not be alone while treating a sedated patient.
g. Recovery status post-operatively must be specifically assessed and recorded by a dentist, appropriately trained registered nurse, registered respiratory therapist, registered practical nurse, the dentist must remain in the facility until that patient is fit for discharge based on discharge criteria. Only fully recovered patients can be considered for discharge unaccompanied. If discharge occurs with any residual symptoms, the patient must be accompanied by a responsible adult.
h. Records of the sedation procedure must be kept that, as a minimum, include the following information:
   i. pre-operative review of the patient's medical history for any changes;
   ii. pre-operative blood pressure and pulse as indicated: ASA 2 patients – recommended;
   iii. ASA 3 patients – required;
   iv. total flow rate of nitrous oxide and oxygen;
   v. percentage of nitrous oxide and duration of administration;
   vi. duration of administration of 100% oxygen at the end of the sedation procedure.
i. Any Critical Event must be reported to the CDSS in writing within 48 hours.

ORAL ADMINISTRATION OF A SINGLE SEDATIVE DRUG

40. The general standards and professional responsibilities listed previously apply to the oral administration of a single drug, when used to induce minimal sedation. For the purposes of this document, these also apply to the sublingual route of administration.
    a. All dentists administering oral minimal sedation must have authorization from the CDSS to do so.
    b. All facilities where oral minimal sedation is administered are subject to random on-site inspections and evaluation by the CDSS.
    c. All dentists administering oral minimal sedation for patients under 12 years of age must provide care that meets all requirements for oral moderate sedation. This includes the professional responsibilities of obtaining authorization and a facility permit from the CDSS to do so, regardless of whether minimal or moderate sedation is intended or achieved.
    d. For the administration of oral minimal sedation for patients under 3 years of age OR under 15 kilograms, the following training is required:
       i. dentists who qualify for the administration of deep sedation and general anesthesia, as outlined in Part II of this document, OR
       ii. dentists who have successfully completed a formal post-graduate program in pediatric dentistry suitable for certification in the Province of Saskatchewan, incorporating adequate training in sedation, such that the individual competence has been specifically evaluated and attested.
    e. Oral administration of a single sedative drug,

specifically a benzodiazepine, is a prudent approach to minimal sedation. No additional drugs with sedative properties (e.g., opioids, antihistamines) are permitted to be administered by any route in the peri-operative period. Non-sedative agents may be administered as deemed appropriate. Chloral Hydrate is no longer permitted as an oral sedative. **Successive doses of oral sedative agents is strongly discouraged.**

f. A dose of an oral sedative used to induce minimal sedation should be administered to the patient in the dental office, taking into account the time required for drug absorption. Patients must be monitored by an appropriately trained dentist, or an appropriately trained registered nurse, registered respiratory therapist, licensed practical nurse, or a registered dental professional where vital sign monitoring is within their scope of practice under the supervision of a dentist, by direct and continuous clinical observation of the level of consciousness and assessment of vital signs which may include heart rate, blood pressure, and respiration. Patients may be discharged to the care of a responsible adult when they are oriented, i.e., to time, place and person relative to the pre-anesthetic condition, ambulatory, with stable vital signs, and showing signs of increasing alertness. The patient must be instructed to not drive a vehicle, operate hazardous machinery, or consume alcohol for a minimum of 18 hours, or longer if drowsiness, or dizziness persists.
    i. Children, the elderly and the medically compromised including patients who are taking prescribed medication with sedative properties require appropriate adjustment of the dose of the oral sedative agent to ensure the intended level of conscious sedation is not exceeded.

g. There are two possible exceptions to the recommendation that the oral sedative be administered in the dental office.
    i. One indication is if the practitioner has determined that the patient requires an oral sedative to facilitate sleep the night prior to the dental procedure.
    ii. The second indication is when the patient's anxiety is such that sedation is required to permit arrival to the dental office.

h. In addition to the requirements in paragraph (7) above, the following additional requirements apply in these two situations:
    i. Each patient must be screened by the dentist, with an appropriate medical history, as described in the General Standards in this document.
    ii. Only one sedative drug should be prescribed at any one time, preferably a benzodiazepine.
    iii. The patient must be instructed not to drive a vehicle and must be accompanied to and from the dental office.
    iv. In each case, clear written instructions must be given to the patient or guardian explaining how to take the medication, the need for accompaniment and listing the expected effects from this drug.
    v. Procedural consent should be obtained prior to the administration of the oral sedative.

i. Patients should be given instructions not to eat or drink for 2 hours prior to their appointment.

j. Patients must be monitored by clinical observation of the level of consciousness and assessment of vital signs, which may include heart rate, blood pressure and respiration.

k. The patient may be discharged once he/she shows signs of progressively increasing alertness and has met the following criteria:
    i. conscious and oriented
    ii. vital signs are stable
    iii. ambulatory

l. Discharge disposition should be documented using a measurable discharge criterion as described in Appendix X.

m. The patient must be discharged to the care of a responsible adult.

n. The patient must be instructed to not drive a vehicle, operate hazardous machinery, or make important decisions. In addition, the patient must be cautioned about consuming alcohol and other drugs with sedative properties for a minimum of 18 hours or longer if drowsiness or dizziness persists.

o. If a reversal agent is administered before discharge criteria have been met, the patient should be monitored beyond the expected duration of action of the reversal agent to guard

against re-sedation.

p. Records of the sedation procedure must be kept that, as a minimum, include the following information:
   i. pre-operative review of the patient's medical history for any changes;
   ii. verification of accompaniment for discharge;
   iii. pre-operative blood pressure and pulse;
   iv. name and dose of the oral sedative administered;
   v. time of administration of the oral sedative;
   vi. time that discharge criteria are met and documented discharge score;
   vii. notation regarding the patient's tolerance of the sedation procedure.
q. The practitioner must not be alone while treating a sedated patient.
r. Any critical event report must be reported to the CDSS in writing within 48 hours.
s. Emergency equipment and drugs must be available at all times. Drugs must be current and stored in readily identifiable and organized fashion (i.e., labelled trays or bags). It is the dentist's responsibility to ensure that the dental office in which sedation is being performed is equipped with and trained to use the following:
   i. full face masks of appropriate sizes and connectors
   ii. current drugs for management of emergencies, including:
      a) oxygen (an E-size cylinder is required)
      b) 1:1,000 epinephrine (at least 2 doses are required, ampules or auto-injectors)
      c) Nitroglycerin
      d) Diphenhydramine
      e) salbutamol inhaler
      f) acetylsalicylic acid (ASA, non-enteric coated)
      g) flumazenil (if a benzodiazepine is administered)
      h) naloxone (if an opioid is administered)

MODERATE SEDATION

41. **Moderate sedation:** a drug induced depression of consciousness during which the patients respond purposefully to verbal commands either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.

42. It is assumed that this will be accomplished by either:
   A. Oral administration of a single sedative drug, with or without nitrous oxide and oxygen,
   B. Parenteral administration of a single sedative drug (intravenous, intramuscular, subcutaneous, submucosal, or intranasal).

43. However, in all cases where the intention is to achieve moderate sedation using any modality of conscious sedation, including the oral administration of a single sedative drug, with or without nitrous oxide and oxygen, the dentist must adhere to the standards for moderate sedation. This includes the professional responsibilities of registering with CDSS and obtaining a facility permit.

ORAL MODERATE SEDATION

44. In addition to the General Standards, this section outlines standards specific to any sedation technique utilizing the oral administration of a single sedative drug, with or without nitrous oxide and oxygen, for moderate sedation.

45. **Professional Responsibilities**
   a. All dentists administering oral moderate sedation must have authorization from the CDSS to do so.
   b. All facilities where oral moderate sedation is administered must have a permit from the CDSS. Such permit will be granted subject to training and conformance with all aspects of the Standard and subject to satisfactory on-site inspections and evaluation by the CDSS.
   c. The following training is required:
      i. dentists who qualify for the administration of deep sedation and general anesthesia, as outlined in Part II of this document; OR
      ii. dentists who qualify for the administration of parenteral moderate sedation, as outlined

later in this document; OR

iii. dentists with formal training in a post-graduate specialty program that has specifically incorporated the teaching of techniques using any modality to produce moderate sedation, as well as appropriate airway management, and has evaluated and attested to the competency of the candidate; OR

iv. dentists who have successfully completed continuing education training that has specifically incorporated the teaching of techniques using any modality to produce moderate sedation, as well as appropriate airway management, followed by a formal evaluation of the competency of the candidate.

d. Oral administration of a single sedative drug, specifically a benzodiazepine, is a prudent approach to moderate sedation. No additional oral drugs with sedative properties (e.g., opioids, antihistamines) are permitted to be administered in the peri-operative period. Non-sedative agents may be administered as deemed appropriate.

e. If an oral sedative has been administered and nitrous oxide/oxygen is used, the latter must be slowly titrated to achieve the signs and symptoms of moderate sedation, with vigilant assessment of the level of consciousness.

f. For the administration of oral moderate sedation for patients under 3 years of age OR under 15 kilograms, the following training is required:

i. dentists who qualify for the administration of deep sedation and general anesthesia, as outlined in Part II of this document; OR

ii. dentists who have successfully completed a formal post-graduate program in pediatric dentistry suitable for certification in the Province of Saskatchewan, incorporating adequate training in sedation, such that the individual competence has been specifically evaluated and attested.

g. All dentists administering oral moderate sedation for patients under 3 years of age OR under 15 kilograms must be able to satisfy the CDSS that they have appropriate training and experience to possess the knowledge, skills, and judgment necessary for the care of such patients. In addition, current PALS or PEARS certification is required.

h. For the purposes of minimal and/or moderate sedation, the oral administration of an opioid and/or chloral hydrate is NOT permitted.

i. The administration of a single dose of an oral sedative is a prudent approach to either minimal or moderate sedation. The administration of multiple doses of an oral sedative until a desired effect is reached (i.e., “incremental dosing”) is strongly discouraged and if used, must be carried out with great caution. Knowledge of the oral sedative’s time of onset, peak response and duration of action is essential to avoid over-sedation. Before administering an additional dose of an oral sedative, the dentist must ensure that the previous dose has taken full effect. The maximum dose of an oral sedative must not be exceeded at any one appointment.

j. Children, elderly, and medically compromised patients, including those who are taking prescribed medication with sedative properties, require appropriate adjustment of the dose(s) of the oral sedative drug(s) to ensure that the intended level of moderate sedation is not exceeded.

k. Dentists, who use the services of another dentist who is qualified to administer oral moderate sedation, share the responsibility of complying with the Standard. However, the ultimate responsibility rests with the facility permit holder to ensure that:

i. the dentist administering oral moderate sedation is authorized by the CDSS to do so;

ii. the dentist has no term, condition, or limitation on his or her certificate of registration relevant to the administration of sedation or general anesthesia; and

iii. all required emergency and other equipment are available and emergency drugs are on-site and current. With the exception of oxygen, EITHER the facility permit holder OR the dentist administering oral moderate sedation MUST provide all required emergency equipment and drugs. The shared provision of emergency equipment and drugs is NOT allowed.

OFFICE PROTOCOL AND FACILITIES

46. The facility must permit adequate access for emergency stretchers and have auxiliary powered backup for suction, lighting, and monitors for use in

the event of a power or system failure.

47. **Patient Selection**
    a. An adequate, clearly recorded current medical history, including present and past illnesses, hospital admissions, current medications and dose, allergies (in particular to drugs), and a functional inquiry or review of systems (ROS), along with an appropriate physical examination must be completed for each patient and must form a permanent part of each patient's record. For medically compromised patients, consultation with their physician may be indicated. This assessment should be consistent in content with Appendix I.
    b. The patient's ASA Classification (see Appendix II) and risk assessment must then be determined. These findings will be used to determine the appropriate facility and technique used.

48. **Sedation Protocol**
    a. The medical history must be reviewed for any changes at each sedation appointment. Such a review must be documented in the sedation record for the appointment.
    b. The patient must have complied with the minimum duration of fasting prior to appointments that is consistent with the following minimum requirements:
        i. 8 hours after a meal that includes meat, fried or fatty foods;
        ii. 6 hours after a light meal (such as toast and a clear fluid), or after ingestion of infant formula or nonhuman milk;
        iii. 4 hours after ingestion of breast milk; and
        iv. 2 hours after clear fluids (such as water, fruit juices without pulp, carbonated beverages, clear tea, and black coffee, but NOT alcohol).
        v. Possible exceptions to this are usual medications or preoperative medications, which may be taken as deemed necessary by the dentist.
    c. Consent must be obtained prior to the administration of any oral sedative, which should be documented.
    d. A dose of an oral sedative used to induce moderate sedation should be administered to the patient in the dental office, taking into account the time required for drug absorption.
    e. There are two rare situations in which the patient may need to take an oral sedative prior to arrival to the dental office. One indication is if the practitioner has determined that the patient requires an oral sedative to facilitate sleep the night prior to the dental procedure. The second indication is when the patient's anxiety is such that sedation is required to permit arrival to the dental office. Such situations, however, should be the exception and not common practice, and may be subject to scrutiny by the CDSS. The following additional requirements apply in these two situations:
        i. Each patient must be screened by the dentist at a prior appointment, with an appropriate medical history, as described in the General Standards in this document.
        ii. If a prescription sedative drug is required, only a benzodiazepine may be prescribed.
        iii. The patient must be instructed not to drive a vehicle and must be accompanied to and from the dental office by a responsible adult.
        iv. For patients under 12 years of age, it is strongly recommended that the patient be accompanied to and from the dental office by two responsible adults, so that one adult can focus on the patient during transport.
        v. In each case, clear written instructions must be given to the patient or guardian explaining how to take the medication, the need for accompaniment and listing the expected effects from this sedative drug.
    f. Clinical observation must be supplemented by the following means of monitoring throughout the sedation administration, including into recovery:
        i. continuous pulse oximeter monitoring of oxyhemoglobin saturation, recorded at a minimum of 5-minute intervals;
        ii. blood pressure and pulse must be taken and recorded pre-operatively and throughout the sedation period at appropriate intervals, not greater than every 15 minutes;

iii. if the monitors used provide an automated printout, this printout may be attached in lieu of handwritten recording of these signs.

g. A sedation record must be kept that includes the recording of vital signs as listed above.
h. Alarm settings and their audio component on monitoring equipment must be used at all times.
i. The patient may be discharged once he/she shows signs of progressively increasing alertness and has met the following criteria:
   i. conscious and oriented
   ii. vital signs are stable
   iii. ambulatory
j. Discharge disposition should be documented using a measurable discharge criteria as described in Appendix X.
k. The patient must be discharged to the care of a responsible adult.
l. Written post-sedation instructions must be given and explained to both the patient and accompanying adult. The patient must be instructed to not drive a vehicle, operate hazardous machinery, or make important decisions. In addition, the patient must be cautioned about consuming alcohol and other drugs with sedative properties for a minimum of 18 hours or longer if drowsiness or dizziness persists.
m. If a reversal agent is administered before discharge criteria have been met, the patient should be monitored beyond the expected duration of action of the reversal agent to guard against re-sedation.
n. The practitioner must not be alone while treating a sedated patient.
o. Any critical event must be reported to the CDSS in writing within 48 hours.

49. **Sedation Equipment**

a. Emergency equipment and drugs must be available at all times. Drugs must be current and stored in readily identifiable and organized fashion (i.e., labelled trays or bags). All automated monitors should receive regular service and maintenance by qualified personnel to ensure proper function. A written record of this maintenance/servicing should be kept on file for review by the CDSS as required. If the monitor requires calibration, then it should be completed at the manufacturers recommended time interval.
b. Equipment that is used for continuous monitoring of sedated patients (including the immediate recovery phase) must have a Health Canada medical device license and be used in accordance with the manufacturer's 'intended use' (i.e., for continuous monitoring). All equipment must have audible alarms, appropriately set, and NOT permanently silenced.
c. It is the dentist's responsibility to ensure that the dental office in which oral moderate sedation is being performed is equipped with the following:
   i. portable apparatus for intermittent positive pressure resuscitation
   ii. pulse oximeter with clearly audible, variable pitch tone
   iii. stethoscope and sphygmomanometers of appropriate sizes
   iv. full face masks of appropriate sizes and connectors
   v. portable auxiliary systems for light, suction, and oxygen
   vi. current drugs in appropriate amounts for management of emergencies, including:
      a) oxygen (an E-size cylinder is required)
      b) 1:1,000 epinephrine (at least 2 doses are required, ampules or auto-injectors)
      c) Nitroglycerin
      d) parenteral diphenhydramine
      e) salbutamol inhaler
      f) flumazenil
      g) acetylsalicylic acid (ASA, non-enteric coated)

PARENTERAL MODERATE SEDATION

50. Parenteral moderate sedation may be accomplished using any one of the following routes of administration: intravenous, intramuscular, subcutaneous, submucosal, or intranasal. For the purposes of this document, these standards also apply when the rectal route of administration is utilized.

51. In addition to the General Standards, this section outlines standards specific to any sedation technique utilizing the parenteral administration of a sedative

drug for moderate sedation.

52. **Additional Professional Responsibilities**
    a. All dentists administering parenteral moderate sedation must have authorization from the CDSS to do so.
    b. All facilities where parenteral moderate sedation is administered must have a permit from the CDSS. Such permit will be granted subject to training and conformance with all aspects of the Standard and subject to satisfactory on-site inspections and evaluation by the CDSS.
    c. The following training is required:
        i. Dentists who qualify for the administration of deep sedation and general anesthesia, as outlined in Part II of this document.
        ii. If not qualified for the administration of deep sedation or general anesthesia, then the following training is required:
            a) Successful completion of a course of instruction in parenteral moderate sedation that is held where adequate facilities are available for proper patient care, including drugs and equipment for the handling of emergencies, and meeting the didactic and clinical requirements outlined below. A certificate or other evidence of satisfactory completion of the course and a description of the program signed by the course director must be submitted to the CDSS for consideration. Completion of such a course will be entered onto the dentist's record.
            b) Didactic requirement: The training must include a minimum of 40 hours of lecture and seminar time presented by dental anesthesiologists, dentists/dental specialists formally trained at the post-graduate level in anesthesia and sedation as they apply to dentistry or physicians formally trained in anesthesia. Dentists in a hospital internship or general practice residency program, recognized by CDSS, may be given credit for the full requirement for single agent IV moderate sedation, **provided that documentation of formal training is obtained from the program director.**
            c) Clinical Requirement: The training must include supervised application of parenteral single agent IV moderate sedation concurrent with dental treatment, performed on a minimum of 15 individually managed patients. Active participation in the above is required. Observation alone is not sufficient.
    d. All dentists administering parenteral moderate sedation must maintain current BLS and ACLS certification.
    e. Parenteral administration of a single sedative drug, specifically a benzodiazepine (e.g., midazolam or diazepam), is a prudent approach to moderate sedation. Accordingly, intravenous titration of a single benzodiazepine alone may be used by those with the training specified immediately above. No additional drugs with sedative properties (e.g., opioids, antihistamines) are permitted to be administered by any route in the peri-operative period. Non-sedative agents may be administered as deemed appropriate.
        i. For the purposes of moderate sedation, the parenteral administration of two benzodiazepines (e.g., midazolam and diazepam) is NOT permitted. For the purposes of moderate sedation, the parenteral administration of an opioid is NOT permitted, except by those dentists described immediately below.
    f. Other than the single parenteral sedative, specifically a benzodiazepine, no additional sedative agents are permitted to be used by any route of administration unless the dentist:
        i. qualifies for the administration of deep sedation or general anesthesia, as outlined in Part II of this document.
    g. There are two rare situations in which the patient may need to take an oral sedative prior to arrival to the dental office. One indication is if the practitioner has determined that the patient requires an oral sedative to facilitate sleep the night prior to the dental procedure. The second indication is when the patient's anxiety is such that sedation is required to permit arrival to the

dental office. Such situations, however, should be the exception and not common practice, and may be subject to scrutiny by the CDSS. The following requirements apply in these two situations:

i. Each patient must be screened by the dentist at a prior appointment, with an appropriate medical history, as described in the General Standards in this document. If a prescription sedative drug is required, only a benzodiazepine may be prescribed.
ii. The patient must be instructed not to drive a vehicle and must be accompanied to and from the dental office.
iii. In each case, clear written instructions must be given to the patient or guardian explaining how to take the medication, the need for accompaniment and listing the expected effects from this sedative drug.

h. **Patients who are under 12 years of age are not acceptable for the administration of parenteral moderate sedation in out-of-hospital dental facilities, except by those practitioners who are qualified to administer deep sedation or general anesthesia.**
i. Pre-operative instructions must be given to the patient or responsible adult. Patients should be given instructions regarding the minimum duration of fasting prior to appointments that is consistent with the following minimum requirements:
   a) 8 hours after a meal that includes meat, fried or fatty foods;
   b) 6 hours after a light meal (such as toast and a clear fluid), or after ingestion of infant formula or nonhuman milk;
   c) 4 hours after ingestion of breast milk; and
   d) 2 hours after clear fluids (such as water, fruit juices without pulp, carbonated beverages, clear tea, and black coffee, but NOT alcohol).
   e) Possible exceptions to this are usual medications or preoperative medications which may be taken as deemed necessary by the dentist.
j. Written consent must be obtained prior to the administration of any parenteral sedative.
k. The patient must never be left unattended following administration of the sedative until fit for discharge.
l. Sedation and monitoring equipment must conform to current appropriate standards for functional safety.
m. One must never be alone with a sedated patient in a closed environment.
n. A dentist qualified for this sedative technique and responsible for the patient must not leave the facility until that patient is fit for discharge unless he/she transfers the care of that patient to a colleague with an equivalent training in sedation whom he/she has briefed on the status of the patient.

THE SEDATION TEAM

53. Parenteral moderate sedation for ambulatory dental patients must be administered through the combined efforts of the sedation team. This team is composed of a minimum of 3 individuals. The Patient must be monitored all times during the administration of parenteral moderate sedation. There are 2 common formats of this team, as follows:

54. In one format, the sedation team includes, as a minimum:
    a. a dentist, who is qualified and responsible for the sedation and dental procedures
    b. a sedation assistant
    c. an operative assistant

55. In the other format, the sedation team includes, as a minimum:
    a. a dentist, who is responsible for the dental procedures only
    b. another dentist or a physician, who is qualified and responsible for the sedation procedures only
    c. an operative assistant

56. In addition to the dentist or physician who is qualified and responsible for the sedation procedures, the sedation team must include at least 1 individual who has successfully completed a provider course in ACLS and that all team members maintain current BLS certification (CPR Level HCP), as a minimum.

57. **Sedation Team for Format 1:**
    a. The use of this sedation team allows a qualified dentist to provide sedation services simultaneously with dental procedures. The sedation team must

consist of the following individuals:

i. The dentist, who is qualified and directly responsible for the sedation, the sedation team, and the dental procedures.
ii. The sedation assistant, who must be a nurse practitioner currently registered with the College of Nurses of Saskatchewan, a registered nurse currently registered with the College of Nurses of Saskatchewan, a respiratory therapist currently registered with the College of Respiratory Therapists of Saskatchewan, or a dentist or physician currently registered in Saskatchewan. In addition, as a minimum, the sedation assistant must provide evidence of successful completion of a provider course in ACLS and maintain current BLS certification (CPR Level HCP) as well as PALS if sedation involves a patient < 12 years of age.

b. It is the responsibility of the dentist to ensure that the sedation assistant is adequately trained to perform their duties. The dentist must ensure that this assistant has or develops the skills necessary for their responsibilities, as described below. This assistant's primary function is to provide assistance, under the direction of the dentist, by:
   i. assessing and maintaining a patent airway
   ii. monitoring vital signs
   iii. keeping appropriate records
   iv. venipuncture
   v. administering medications as directed
   vi. assisting in emergency procedures
c. The operative assistant primary function is to keep the operative field free of blood, mucous and debris.
d. The recovery supervisor has, under the dentist's supervision, the primary function of supervising and monitoring patients in the recovery area, and the secondary function of determining if the patient meets the criteria for discharge, as outlined below. This person must have the same qualifications as described for the sedation assistant. The sedation assistant may act as a recovery supervisor.
e. In addition, an office assistant should be available to attend to office duties, so the sedation team is not disturbed.

58. **Sedation Team for Format 2:**

a. The use of this sedation team requires a qualified dentist or physician to provide sedation services. The sedation team must consist of the following individuals:
   i. a dentist, who is responsible for the dental procedures only
   ii. another qualified dentist or a physician, who is responsible for the sedation procedures only
   iii. an operative assistant, whose primary function is to keep the operative field free of blood, mucous, and debris.
b. Where there is a separate dentist or physician solely providing the parenteral moderate sedation, then a sedation assistant or a recovery supervisor is not required, provided that this individual fulfills these duties. This dentist or physician may act as a recovery supervisor.
c. In addition, an office assistant should be available to attend to office duties, so the sedation team is not disturbed.
d. Dentists employing the Sedation Team Format 2 (who use the services of another dentist or a physician who is qualified to administer parenteral moderate sedation) share the responsibility of complying with the Standard. However, the ultimate responsibility rests with the facility permit holder to ensure that:
e. the dentist or physician administering parenteral moderate sedation is authorized by, or has approval from, the CDSS to do so;
f. this dentist or physician has no term, condition, or limitation on his or her certificate of registration with his or her respective regulatory College, relevant to the administration of sedation or general anesthesia; and
g. all required emergency and other equipment are available and emergency drugs are on- site and current.
h. With the exception of oxygen, EITHER the facility permit holder OR the dentist / physician administering parenteral moderate sedation MUST provide all required emergency equipment and drugs. The shared provision of emergency equipment and drugs is NOT allowed.

OFFICE PROTOCOL AND FACILITIES

59. The facility must permit adequate access for emergency stretchers and have auxiliary powered

backup for suction, lighting and monitors for use in the event of a power or system failure.

60. **Patient Selection**
    a. An adequate, clearly recorded current medical history, including present and past illnesses, hospital admissions, current medications and dose, allergies (in particular to drugs), and a functional inquiry or review of systems (ROS), along with an appropriate physical examination must be completed for each patient and must form a permanent part of each patient's record. For medically compromised patients, consultation with their physician may be indicated. This assessment should be consistent in content with Appendix I.

    b. The patient's ASA Classification (see Appendix II) and risk assessment must then be determined. These findings will be used to determine the appropriate facility and technique used.

61. **Sedation Protocol**
    a. The medical history must be reviewed for any changes at each sedation appointment. Such review should be documented in the sedation record for the appointment.
    b. The patient must have complied with the minimum duration of fasting prior to appointments that is consistent with the following minimum requirements:
        i. 8 hours after a meal that includes meat, fried or fatty foods;
        ii. 6 hours after a light meal (such as toast and a clear fluid), or after ingestion of infant formula or nonhuman milk;
        iii. 4 hours after ingestion of breast milk; and
        iv. 2 hours after clear fluids (such as water, fruit juices without pulp, carbonated beverages, clear tea, and black coffee, but NOT alcohol).
        v. Possible exceptions to this are usual medications or pre-operative medications, which may be taken as deemed necessary by the dentist.
    b. Laboratory investigations may be used at the discretion of the dentist or physician responsible for the sedation procedures.
    c. Clinical observation must be supplemented by the following means of monitoring throughout the sedation administration:
        i. continuous pulse oximeter monitoring of oxyhemoglobin saturation, recorded at a minimum of 5-minute intervals.
        ii. blood pressure and pulse must be taken and recorded pre-operatively and throughout the sedation period at appropriate intervals, not greater than every 5 minutes.
        iii. if the monitors used provide an automated printout, this printout may be attached in lieu of handwritten recording of these signs
    d. A sedation record must be kept consistent with Appendix IV.
    e. When intravenous sedation is used, an intravenous needle or indwelling catheter must be in situ and patent at all times during the procedure. An intermittent or continuous fluid administration must be used to ensure patency.
    f. Alarm settings and their audio component on monitoring equipment must be used at all times.

62. **Recovery Protocol**
    a. As described below, recovery accommodation and supervision are mandatory when parenteral sedation is administered.
    b. The recovery area or room must be used to accommodate the post-sedation patient from the completion of the procedure until the patient meets the criteria for discharge. Oxygen and appropriate suction and lighting must be readily available. The operatory can act as a recovery room.
    c. A sufficient number of recovery areas must be available to provide adequate recovery time for each case. Caseloads must be governed accordingly.
    d. Appropriate supervision and appropriately recorded monitoring by the recovery supervisor must occur throughout the recovery period, until the patient meets the criteria for discharge. Continuous pulse oximeter monitoring of oxyhemoglobin saturation, as well as blood pressure and heart rate measurements that must be recorded at a minimum of 15-minute intervals.
    e. The patient may be discharged once he/she

shows signs of progressively increasing alertness and has met the following criteria:
   i. conscious and oriented
   ii. vital signs are stable
   iii. ambulatory

f. The patient must be discharged to the care of a responsible adult.
g. Discharge disposition should be documented using a measurable discharge criteria as described in Appendix X.
h. Written post-sedation instructions must be given and explained to both the patient and accompanying adult. The patient must be instructed to not drive a vehicle, operate hazardous machinery, or make important decisions. In addition, the patient must be cautioned about consuming alcohol and other drugs with sedative properties for a minimum of 18 hours, or longer if drowsiness or dizziness persists.
i. If a reversal agent is administered before discharge criteria have been met, the patient should be monitored beyond the expected duration of action of the reversal agent to guard against re-sedation.
j. Any critical event must be reported to the CDSS in writing within 48 hours.

63. **Sedation Equipment**

a. Emergency equipment and drugs must be available at all times. Drugs must be current and stored in readily identifiable and organized fashion (i.e., labelled trays or bags). All automated monitors should receive regular service and maintenance by qualified personnel to ensure proper function. A written record of this maintenance/ servicing should be kept on file for review by the CDSS as required. If the monitor requires calibration, then it should be completed at the manufacturers recommended time interval.
b. Equipment that is used for continuous monitoring of sedated patients (including the immediate recovery phase) must have a Health Canada medical device license and be used in accordance with the manufacturer's 'intended use' (i.e., for continuous monitoring). All equipment must have audible alarms, appropriately set, and NOT permanently silenced.
c. It is the dentist's responsibility to ensure that the dental office in which parental moderate sedation is being performed is equipped with and staff appropriately trained to use the following:
   i. portable apparatus for intermittent positive pressure resuscitation
   ii. pulse oximeter with clearly audible variable pitch tone
   iii. stethoscope and sphygmomanometers of appropriate sizes and/or automated blood pressure monitor with programmable alarm settings and audio component
   iv. tonsil suction (Yankauer) device adaptable to the suction outlet
   v. full face masks of appropriate sizes and connectors
   vi. adequate selection of endotracheal tubes or laryngeal mask airways and appropriate connectors
   vii. laryngoscope with an adequate selection of blades, spare batteries, and bulbs
   viii. Magill forceps
   ix. adequate selection of oral airways
   x. portable auxiliary systems for light, suction, and oxygen
   xi. automated external defibrillator [AED]
   xii. intravenous indwelling catheters and needles
   xiii. current drugs in appropriate amounts for management of emergencies, including:
      a) oxygen (an E-size cylinder is required)
      b) epinephrine (at least 4 sources are required, such as 4 ampules 1:1000 epinephrine, or a combination of ampules and 1:10,000 epinephrine syringes)
      c) nitroglycerin
      d) parenteral diphenhydramine
      e) salbutamol inhaler
      f) parenteral vasopressor (e.g.,ephedrine)
      g) parenteral atropine
      h) parenteral corticosteroid
      i) flumazenil
      j) appropriate intravenous fluids
      k) acetylsalicylic acid (ASA, non-enteric coated)

PART 2: DEEP SEDATION AND GENERAL ANESTHESIA

64. **DEFINITION**
In addition to the General Standards, this section outlines standards specific to any technique that has depressed the patient beyond moderate sedation, as defined in Part I.

PROFESSIONAL RESPONSIBILITIES

65. In addition to the General Standards listed in Part I, the following responsibilities apply:
    a. All dentists administering deep sedation or general anesthesia for the purpose of dental care outside of SHA hospital facilities must have authorization and a CDSS sedation permit from the CDSS to do so. All dentists and physicians administering deep sedation or general anesthesia must have approval from the CDSS to do so. **A physician anesthesiologist is performing sedation/general anesthesia in a dental office must also ensure that the facility is appropriately certified by the College of Physicians and Surgeons of Saskatchewan**
    b. All facilities where deep sedation or general anesthesia is administered must have a permit from the CDSS. Such permit will be granted subject to training and conformance with all aspects of the Standard and subject to satisfactory onsite inspections and evaluation by the CDSS.
    c. Deep sedation and general anesthesia may only be performed in the dental office by a professional qualified according to the following standards.
        i. Dentists who have successfully completed a postgraduate anesthesia program in a university and/or teaching hospital over a minimum of 24 consecutive months. The program must have specifically evaluated and attested to the competency of the individual.
        ii. Dentists who have successfully completed a formal post-graduate program in oral and maxillofacial surgery suitable for certification in the Province of Saskatchewan, with a minimum of 4 months spent on an anesthesia rotation.
        iii. Physicians currently registered with the College of Physicians and Surgeons of Saskatchewan (CPSS) who can provide evidence satisfactory to the CDSS that they hold a designation as a specialist in anesthesia with the Royal College of Physicians and Surgeons of Canada (RCPSC) OR one of the following:
            a) Completion of a 12-month rotation in a program accredited by the College of Family Physicians of Canada (CFPC) under the category of "Family Medicine Anesthesia".
            b) Recognition by the CPSS as a specialist in anesthesia.
            c) Satisfactory completion of all CPSS requirements for a physician requesting a change in their scope of practice AND active privileges to support similar procedures at a SHA hospital facility.
    d. All dentists and physicians administering deep sedation or general anesthesia must maintain current ACLS and BLS certification.
    e. All dentists and physicians administering deep sedation or general anesthesia for patients under 12 years of age must be able to satisfy the CDSS that they have appropriate training and experience to possess the knowledge, skills, and judgement necessary for the care of such patients. In addition, current PALS certification is required.
    f. When the operating dentist is not administering the anesthetic, they share the responsibility to ensure that these standards are followed.
    g. All facilities where deep sedation or general anesthesia is administered must have written policies and procedures, including checklists for the management of emergencies. The facility's written policies and procedures must be reviewed with staff regularly, which must be documented.
    h. Pre-operative instructions must be given to the patient or responsible adult. Patients should be given instructions regarding the minimum duration of fasting prior to appointments that is consistent with the following minimum

requirements:

i. 8 hours after a meal that includes meat, fried or fatty foods;
ii. 6 hours after a light meal (such as toast and a clear fluid), or after ingestion of infant formula or nonhuman milk;
iii. 4 hours after ingestion of breast milk; and
iv. 2 hours after clear fluids (such as water, fruit juices without pulp, carbonated beverages, clear tea, and black coffee, but NOT alcohol).

Possible exceptions to this are usual medications or preoperative medications, which may be taken as deemed necessary by the dentist.

i. Written consent must be obtained **prior** to the administration of any parenteral sedative or general anesthetic.
j. Anesthetic and monitoring equipment must conform to current appropriate standards for functional safety.
k. The patient must never be left unattended for this sedative/anesthetic technique during the administration of the sedative or general anesthetic.
l. A dentist or physician qualified for this sedative/ anesthetic technique and responsible for the patient must not leave the facility until that patient is fit for discharge unless he/she transfers the care of that patient to a colleague with an equivalent training in sedation/general anesthesia whom he/she has briefed on the status of the patient.

THE ANESTHETIC TEAM

66. General anesthesia or deep sedation for ambulatory dental patients must be administered through the combined efforts of the anesthetic team. This team is composed of a minimum of 3 individuals. The patient must be monitored at all times during the administration of general anesthesia or deep sedation. There are 2 common formats of this team, as follows:
    a. In one format, the anesthetic team includes, as a minimum:
        i. a dentist, who is qualified and responsible for the anesthesia and dental procedures
        ii. an anesthetic assistant
        iii. an operative assistant
    b. In the other format, the anesthetic team includes, as a minimum:
        i. a dentist, who is responsible for the dental procedures only
        ii. another dentist or a physician, who is qualified and responsible for the anesthesia procedures only
        iii. an operative assistant

67. In addition, the anesthetic team must include at least 2 individuals with current ACLS certification and, if providing care for patients under 12 years of age, current PALS certification. All individuals must maintain current BLS, as a minimum.

68. **Anesthetic Team for Format 1:**
    a. The use of this anesthetic team allows a qualified dentist to provide anesthesia services simultaneously with dental procedures. The anesthetic team must consist of the following individuals:
        i. The dentist, who is qualified and directly responsible for the anesthesia, the anesthetic team, and the dental procedures.
        ii. The anesthetic assistant, who must be a nurse practitioner currently registered with the College of Nurses of Saskatchewan, a registered nurse currently registered with the College of Nurses of Saskatchewan, a respiratory therapist currently registered with the College of Respiratory Therapists of Saskatchewan, or a dentist or physician currently registered in Saskatchewan. In addition, the anesthetic assistant must maintain current ACLS certification and, if providing care for patients under 12 years of age, current PALS certification.
    b. It is the responsibility of the dentist to ensure that the anesthetic assistant is adequately trained in peri-operative care (e.g., documented work experience in emergency care, ICU, PACU and/or the operating room environment or training to a similar level) and able to perform their duties. The dentist must ensure that this assistant has and further develops the skills necessary for their responsibilities, as described below. This assistant's primary function is to

provide assistance, under the direction of the dentist, by:
   i. assessing and maintaining a patent airway
   ii. monitoring vital signs
   iii. keeping appropriate records
   iv. venipuncture
   v. administering medications as directed
   vi. assisting in emergency procedures
c. The operative assistant, whose primary function is to keep the operative field free of blood, mucous and debris.
d. The recovery supervisor has, under the dentist's supervision, the primary function of supervising and monitoring patients in the recovery area, and the secondary function of determining if the patient meets the criteria for discharge, as outlined below. This person must have the same qualifications as described for the sedation assistant. The sedation assistant may act as a recovery supervisor.
e. In addition, an office assistant should be available to attend to office duties, so the anesthetic team is not disturbed.

69. **IMPORTANT:** Patients under 12 years of age have reduced physical reserves and impairment may occur rapidly. In particular, it can be difficult to diagnose hypoventilation and airway obstruction in a timely manner. The supervision of such a patient must be vigilant throughout the recovery period and utilize appropriate monitoring. The recovery supervisor for such a patient must be adequately trained in peri-operative care, have both current ACLS certification and current PALS certification, and possess the knowledge, skills, and judgment to recognize and respond to an emergency. Appropriate continuous supervision and appropriately recorded monitoring by the recovery supervisor must occur throughout the recovery period, until the patient meets the criteria for discharge.

70. **Anesthetic Team for Format 2:**
   a. The use of this anesthetic team requires a qualified dentist or physician to provide anesthesia services. The anesthetic team must consist of the following individuals:
      i. a dentist, who is responsible for the dental procedures only
      ii. another dentist or a physician, who is qualified and responsible for the anesthesia procedures only
      iii. an operative assistant, whose primary function is to keep the operative field free of blood, mucous, and debris.
   b. Where there is a separate dentist or physician solely providing the deep sedation or general anesthetic, then an anesthetic assistant or a recovery supervisor is not required, provided that this individual fulfills these duties. This dentist or physician may act as a recovery supervisor if they are not otherwise occupied.
   c. In addition, an office assistant should be available to attend to office duties, so the anesthetic team is not disturbed.
   d. Dentists, who use the services of another dentist or a physician who is qualified to administer deep sedation or general anesthesia, share the responsibility of complying with the Standard. However, the ultimate responsibility rests with the facility permit holder to ensure that:
      i. the dentist or physician administering deep sedation or general anesthesia is authorized by or has approval from the CDSS to do so;
      ii. this dentist or physician has no term, condition, or limitation on their certificate of registration with their respective regulatory College, relevant to the administration of sedation or general anesthesia; and
      iii. all required emergency and other equipment are available and emergency drugs are on-site and current.
   e. With the exception of oxygen, EITHER the facility permit holder OR the dentist / physician administering deep sedation or general anesthesia MUST provide all required emergency equipment and drugs. The shared provision of emergency equipment and drugs is NOT allowed.

OFFICE PROTOCOL AND FACILITIES

71. The facility must permit adequate access for emergency stretchers and have auxiliary powered backup for suction, lighting and monitors for use in the event of a power or system failure.

72. **Patient Selection**
   a. An adequate, clearly recorded current medical

history, including present and past illnesses, hospital admissions, current medications and dose, allergies (in particular to drugs), and a functional inquiry or review of systems (ROS), along with an appropriate physical examination must be completed for each patient and must form a permanent part of each patient's record, prior to the administration of deep sedation or general anesthesia. For medically compromised patients, consultation with their physician may be indicated. This assessment should be consistent in content with Appendix I.

b. The patient's ASA Classification (see Appendix II) and risk assessment must be determined. These findings will be used to determine the appropriate facility and technique to be used.

73. **Anesthetic Protocol**
    a. The medical history must be reviewed for any changes at each deep sedation or general anesthetic appointment. Such review should be documented in the anesthetic record for the appointment.
    b. The patient must have complied with the minimum duration of fasting prior to appointments that is consistent with the following minimum requirements:
        i. 8 hours after a meal that includes meat, fried or fatty foods;
        ii. 6 hours after a light meal (such as toast and a clear fluid), or after ingestion of infant formula or nonhuman milk;
        iii. 4 hours after ingestion of breast milk; and
        iv. 2 hours after clear fluids (such as water, fruit juices without pulp, carbonated beverages, clear tea, and black coffee, but NOT alcohol).
    c. Possible exceptions to this are usual medications or pre-operative medications, which may be taken as deemed necessary by the professional responsible for the administration of the sedation or general anesthetic.
    d. Laboratory investigations may be used at the discretion of the dentist or physician responsible for the anesthesia procedures.
    e. Clinical observation must be supplemented by the following means of monitoring performed at a minimum of 5-minute intervals throughout the deep sedation or general anesthetic administration and until the patient is no longer deeply sedated, including into recovery, if necessary:
        i. continuous pulse oximeter monitoring of oxyhemoglobin saturation
        ii. blood pressure and pulse
        iii. continuous observation of respiration
        iv. continuous electrocardiogram monitoring capabilities if indicated, or the patient carries an ASA 3 or higher classification
        v. continuous end tidal CO2 monitoring
        vi. if non-intubated, a pre-tracheal/pre-cordial stethoscope is also recommended
        vii. if intubated or a laryngeal mask airway is used, monitoring by oxygen analyzer is required
    f. If a volatile inhalational anesthetic agent is used to maintain anesthesia (e.g., isoflurane, sevoflurane, desflurane), an anesthetic agent analyzer is required. Office ventilation and air exchange must be in accordance with local and regional bylaws.
    g. If triggering agents for malignant hyperthermia are being used (volatile inhalational general anesthetics or succinylcholine), measurement of temperature and appropriate emergency drugs, as outlined below, must be readily available (Dantrolene is very expensive with a short shelf life! But if you are doing inhaled gas GA it must be present).
    h. An anesthetic record must be kept consistent with Appendix VI.
    i. An intravenous needle or indwelling catheter must be in situ and patent at all times during the procedure. An intermittent or continuous fluid administration must be used to ensure patency.
    j. Alarm settings and their audio component on monitoring equipment must be used at all times.

74. **Recovery Protocol**
    a. As described below, recovery accommodation and appropriate supervision is mandatory where deep sedation or general anesthesia is administered.
    b. The recovery area or room must be used to

accommodate the patient from the completion of the procedure until the patient meets the criteria for discharge. Oxygen and appropriate suction and lighting must be readily available. The operatory can act as a recovery room.

c. A sufficient number of such recovery areas must be available to provide adequate recovery time for each case. Caseloads must be governed accordingly.
d. Appropriate supervision and appropriately recorded monitoring by the recovery supervisor should occur throughout the recovery period, until the patient meets the criteria for discharge. In addition to continuous pulse oximetry, monitors must be immediately available for recovery use, including sphygmomanometer or other devices to measure blood pressure. Access to electrocardiogram and capnography is required.
e. The patient may be discharged once he/she shows signs of progressively increasing alertness and has met the following criteria:
    i. conscious and oriented
    ii. vital signs are stable
    iii. ambulatory
f. The patient must be discharged to the care of a responsible adult.
g. Discharge disposition should be documented using a measurable discharge criteria as described in Appendix X.
h. Written post-sedation/anesthetic instructions must be given and explained to both the patient and accompanying adult. The patient must be instructed to not drive a vehicle, operate hazardous machinery, or make important decisions. In addition, the patient must be cautioned about consuming alcohol and other drugs with sedative properties for a minimum of 18 hours or longer if drowsiness or dizziness persists.
i. If a reversal agent is administered before discharge criteria have been met, the patient should be monitored beyond the expected duration of action of the reversal agent to guard against re-sedation.
j. Any critical event must be reported to the CDSS in writing within 48 hours.

75. **Deep Sedation/General Anesthesia Equipment**

a. Emergency equipment and drugs must be available at all times. Drugs must be current, in sufficient supply for caseload and stored in readily identifiable and organized fashion (i.e., labelled trays or bags). All automated monitors should receive regular service and maintenance by qualified personnel to ensure proper function. A written record of this maintenance/ servicing should be kept on file for review by the CDSS as required. If the monitor requires calibration, then it should be completed at the manufacturers recommended time interval.

b. Equipment that is used for continuous monitoring of sedated or anesthetized patients (including the immediate recovery phase) must have a Health Canada medical device license and be used in accordance with the manufacturer's 'intended use' (i.e., for continuous monitoring). All equipment must have audible alarms, appropriately set, and NOT permanently silenced.
    i. Gas delivery systems used for the administration of nitrous oxide and oxygen must meet the following requirements:
        a) a nitrous oxide and oxygen gas delivery system that meets the requirements for such equipment as described in the previous section of this document under Minimal Sedation; OR
        b) general anesthesia gas delivery system that has been approved by Health Canada and:
            (i) must be equipped with connectors and tubing which allow use of a full face mask for resuscitative ventilation with 100% oxygen;
            (ii) must have readily available a reserve supply of oxygen ready for immediate use. This should be portable, an "E" size cylinder as a minimum and attached with appropriate regulator, flowmeter and connectors as described previously;
            (iii) must be equipped with a scavenging system installed per manufacturer's specifications.
    ii. If a vaporizer is fitted to the gas delivery

system, then:

a) It must have an agent-specific, keyed filling device.
b) The connection of the inlet and outlet ports of the vaporizer to the gas machine must be such that an inadvertent incorrect attachment cannot be made.
c) All vaporizer control knobs must open counterclockwise and be marked to indicate vapour concentration in volume percent. It must mark and lock the control in the "off" position.
d) The vaporizer must be connected to the scavenging system. Where multiple vaporizers are used, an Interlock System must be installed.

iii. If the patient is intubated or a laryngeal mask airway is used, an oxygen analyzer is required.

iv. If a volatile inhalational anesthetic agent is used to maintain anesthesia (e.g., isoflurane, sevoflurane, desflurane), an anesthetic agent analyzer is required.

v. It is the dentist's responsibility to ensure that the dental office in which deep sedation or general anesthesia is being performed is equipped with the following:

a) portable apparatus for intermittent positive pressure resuscitation
b) pulse oximeter with clearly audible variable pitch tone
c) stethoscope and sphygmomanometers of appropriate sizes and/or automated blood pressure monitor with programmable alarm settings and audio component
d) tonsil suction (Yankauer) device adaptable to the suction outlet
e) full face masks of appropriate sizes and connectors
f) adequate selection of laryngeal mask airways and appropriate connectors
g) adequate selection of endotracheal tubes and appropriate connectors
h) laryngoscope with an adequate selection of blades, spare batteries, and bulbs
i) Magill forceps
j) adequate selection of oral airways
k) portable auxiliary systems for light, suction, and oxygen
l) apparatus for emergency cricothyroid membrane puncture may be utilized by those with appropriate training in case of emergency
m) electrocardiogram monitor with programmable alarm settings and audio component
n) automated external defibrillator [AED]
o) capnometer/capnograph with programmable alarm settings and audio component
p) intravenous indwelling catheters and needles
q) current drugs in appropriate amounts for management of emergencies, including:
    (i) oxygen (an E-size cylinder is required)
    (ii) epinephrine (at least 4 sources are required, such as 4 ampules 1:1000 epinephrine, or a combination of ampules and 1:10,000 epinephrine syringes).
    (iii) Nitroglycerin
    (iv) parenteral diphenhydramine
    (v) salbutamol inhaler
    (vi) parenteral vasopressor (e.g., ephedrine)
    (vii) parenteral atropine
    (viii) parenteral corticosteroid
    (ix) flumazenil
    (x) naloxone
    (xi) appropriate intravenous fluids
    (xii) parenteral muscle relaxant to support the management of laryngospasm
    (xiii) succinylcholine, if inhalation induction is used
    (xiv) parenteral amiodarone
    (xv) parenteral beta-blocker
    (xvi) parenteral morphine or fentanyl
    (xvii) dantrolene, if triggering agents for malignant hyperthermia are being used (consistent with MHAUS guidelines)

(xviii) D5W
(xix) acetylsalicylic acid (ASA, non-enteric coated)

APPENDIX I

MEDICAL HISTORY AND PATIENT EVALUATION

76. An adequate, current, clearly recorded and signed medical history must be made for each patient. The history is part of the patient's permanent record. It forms a database upon which appropriate sedation or anesthetic modality is determined. The medical history must be kept current. This information may be organized in any format that each dentist prefers provided that the scope of the content contains the minimum information described in this section.

VITAL STATISTICS

77. This includes the patient's full name, date of birth, weight in kilograms (if a child), and the name of the person to be notified in the event of an emergency. In case of a minor or a mentally disadvantaged patient, the name of the parent or guardian must be recorded.

CORE MEDICAL HISTORY

78. The core medical history must fulfill the following requirements:
    a. It must elicit the core medical information to enable the dentist to assign the correct ASA Classification (see Appendix II) in order to assess risk factors in relation to sedation or anesthetic choices.
    b. This core information should be a system-based review of the patient's past and current health status. It can be developed from the sample medical history questionnaire, supplemented with questions relevant to the use of sedation or general anesthesia (e.g., family history of adverse anesthetic outcomes, alcohol and other substance use, screening for sleep apnea).

CORE PHYSICAL EXAMINATION

79. A current, basic physical examination, suitable for determining information that may be significant to sedation and anesthesia and appropriate to the modality being used, must be carried out for each patient. At a minimum, all modalities of sedation or general anesthesia require the evaluation and recording of significant positive findings related to:
    a. general appearance, noting obvious abnormalities
    b. an appropriate airway assessment
    c. the taking and recording of vital signs, (i.e., heart rate and blood pressure). This can be carried out by most general practitioners and specialists.

80. If a more in-depth physical examination is required involving (i.e., ASA III or greater):
    a. auscultation (cardiac or pulmonary)
    b. examination of other physiologic systems, or,
    c. other assessments.

81. This examination must be performed by a physician or by a dentist who has competed formal training in a postgraduate anesthesiology program or an oral and maxillofacial surgery program. The core physical examination may include an order for and assessment of laboratory data if indicated.

APPENDIX II

APPENDIX II

American Society of Anesthesiology Physical Status Classification System

ASA I: A normal healthy patient

ASA II: A patient with mild systemic disease

ASA III: A patient with severe systemic disease that limits activity but is not incapacitating

ASA IV: A patient with incapacitating systemic disease that is a constant threat to life

ASA V: A moribund patient not expected to survive 24 hours with or without operation

ASA VI: A declared brain-dead patient whose organs are being removed for donor purposes

ASA E: Emergency operation of any variety; E precedes the number, indicating the patient's physical status

APPENDIX III

APPENDIX III

Characteristics of the Levels of Sedation and General Anesthesia

	MINIMAL SEDATION	MODERATE SEDATION	DEEP SEDATION	GENERAL ANESTHESIA
CONSCIOUSNESS	maintained	maintained	obtunded	unconscious
RESPONSIVENESS	to **either** verbal command **or** tactile stimulation	may require either one of or BOTH verbal command and tactile stimulation	response to repeated or painful stimuli	unarousable, even to pain
AIRWAY	maintained	no intervention required	intervention may be required	intervention usually required
PROTECTIVE REFLEXES	intact	intact	partial loss	assume absent
SPONTANEOUS VENTILATION	unaffected	adequate	may be inadequate	frequently inadequate
CARDIOVASCULAR FUNCTION	unaffected	usually maintained	usually maintained	may be impaired
REQUIRED MONITORING	basic	increased	advanced	advanced

APPENDIX IV

82. Sedation Record for Oral Moderate Sedation +/- Nitrous Oxide Sedation A sedation record must contain the following information:
    a. patient's name, date of birth, weight in kilograms (if a child)
    b. date of procedure
    c. review of medical history, including allergies and medications
    d. verification of NPO status
    e. verification of accompaniment for discharge
    f. pre-operative blood pressure, heart rate, oxygen saturation, respiration rate
    g. ASA status
    h. names of all drugs administered
    i. doses of all drugs administered
    j. time of administration of all drugs
    k. names and doses of all local anesthetics administered
    l. record of systolic and diastolic blood pressure, heart rate, oxygen saturation and respiration rate at a minimum of 15-minute intervals. If the monitors used provide an automated printout, this printout may be attached in lieu of handwritten recording of these signs
    m. time of the start and completion of the dental procedure
    n. recovery period must be clearly documented
    o. discharge criteria met: oriented, ambulatory, vital signs stable (record of blood pressure, heart rate, oxygen saturation)
    p. time that discharge criteria are met
    q. name and designation of the professional responsible for the case
    r. a notation of any Critical Event

APPENDIX V

SEDATION RECORD FOR PARENTERAL MODERATE SEDATION

83. An anesthetic/sedation record must contain the following information:
    a. patient's name, date of birth, weight in kilograms (if a child)
    b. date of procedure
    c. review of medical history, including allergies and medications
    d. verification of NPO status
    e. verification of accompaniment for discharge
    f. pre-operative blood pressure, heart rate, oxygen saturation, respiration rate
    g. ASA status
    h. names of all drugs administered
    i. doses of all drugs administered
    j. time of administration of all drugs
    k. names and doses of all local anesthetics administered
    l. if used: intravenous type, location of venipuncture, type and volume of fluids administered
    m. record of systolic and diastolic blood pressure, heart rate and oxygen saturation at a minimum of 5- minute intervals. If the monitors used provide an automated printout, this printout may be attached in lieu of handwritten recording of these signs
    n. time of the start and completion of the administration of the sedation
    o. time of the start and completion of the dental procedure
    p. recovery period must be clearly documented
    q. discharge criteria met: oriented, ambulatory, vital signs stable (record of blood pressure, heart rate, oxygen saturation)
    r. time that discharge criteria are met
    s. names and designations of all members of the sedation team
    t. a notation of any Critical Event

APPENDIX VI

84. Anesthetic Record for Deep Sedation or General Anesthesia An anesthetic record must contain the following information:
    a. patient's name, date of birth, weight in kilograms (if a child)
    b. date of procedure

c. review of medical history, including allergies and medications
d. verification of NPO status
e. verification of accompaniment for discharge
f. pre-operative blood pressure, heart rate, oxygen saturation, respiration rate
g. ASA status
h. names of all drugs administered
i. doses of all drugs administered
j. time of administration of all drugs
k. names and doses of all local anesthetics administered
l. if used: intravenous type, location of venipuncture, type and volume of fluids administered
m. record of systolic and diastolic blood pressure, heart rate, oxygen saturation, end- tidal carbon dioxide levels (ETCO2) at a minimum of 5-minute intervals. If the monitors used provide an automated printout, this printout may be attached in lieu of handwritten recording of these signs
n. if a general anesthetic, then record the respiration rate at 15-minute intervals
o. continuous electrocardiogram monitoring as indicated
p. if triggering agents for malignant hyperthermia are being used (volatile inhalational general anesthetics or succinylcholine), record of temperature at a minimum of 15-minute intervals
q. time of the start and completion of the administration of the deep sedation/general anesthetic
r. time of the start and completion of the dental procedure
s. recovery period must be clearly documented
t. discharge criteria met: oriented, ambulatory, vital signs stable (record of blood pressure, heart rate, oxygen saturation)
u. time that discharge criteria are met
v. names and designations of all members of the anesthetic team
w. a notation of any Critical Event

APPENDIX VII

SAFE HANDLING OF INJECTABLE DRUGS

85. The transmission of blood-borne viruses and other microbial pathogens to patients may occur due to unsafe and improper handling of injectables (e.g., local anesthetics, drugs, and solutions for sedation).

86. The following practices should be adhered to when preparing and administering injectable drugs.

87. ASEPTIC TECHNIQUE

a. Perform hand hygiene prior to accessing supplies, handling vials and IV solutions, and preparing or administering drugs.
b. Prepare drugs and supplies in a clean area on a clean surface.
c. Use aseptic technique in all aspects of parenteral drug administration, drug vial use and injections. Limit access to select trained individuals, if possible.
d. Never administer a drug from the same syringe to more than one patient, even if the needle is changed between patients.
e. Never store needles and syringes unwrapped, as sterility cannot be assured.
f. If an administration set is prepared ahead of time, all drugs should be drawn up as close to use as possible to prevent contamination. Once set up, an administration set should be covered.
g. Do not use intravenous solution bags as a common source of supply for multiple patients. Single Dose Vials, intended for single patient use, typically lack preservatives. The use of these vials for multiple patients carries substantial risk for bacterial contamination and infection.
h. Do not reuse single dose vials.
i. Always use a sterile syringe and needle/cannula when entering a vial. Never enter a vial with a syringe or needle/cannula that has been used on a patient.
j. Never combine or pool the leftover contents of single dose vials.

MULTI-DOSE VIALS

88. Any error in following protocols for the correct use of multi-dose vials can result in the transmission of both bacterial and blood-borne viral pathogens. Transmission of HBV, HCV and HIV has been associated with the use of multi-dose vials.

89. The use of multi-dose vials for injectable drugs increases the risk of transmission of blood-borne pathogens and bacterial contamination of the vial and should be avoided. Patient safety should be prioritized over cost when choosing between multi-dose and single dose vials.

90. If multi-dose vials are used, the following practices must be followed each time the multi-dose vial is used:
    a. NEVER re-enter a vial with a used needle OR used syringe.
    b. Once medication is drawn up, the needle should be IMMEDIATELY withdrawn from the vial. A needle should NEVER be left in a vial to be attached to a new syringe.
    c. Use a multi-dose vial for a single patient whenever possible and mark the vial with the patient's name.
    d. Mark the multi-dose vial with the date it was first used and ensure that it is discarded at the appropriate time.
    e. Adhere to aseptic technique when accessing multidose vials. Multi-dose vials should be accessed on a surface that is clean and where no dirty, used or potentially contaminated equipment is placed or stored. Scrub the access diaphragm of vials using friction and 70% alcohol. Allow to dry before inserting a new needle and new syringe into the vial.
    f. Discard the multi-dose vial immediately if sterility is questioned or compromised or if the vial is not marked with the patient's name and original entry date.
    g. Review the product leaflet for recommended duration of use after entry of the multi- dose vial. Discard opened multi-dose vials according to the manufacturer's instructions or within 28 days, whichever is shorter.

91. The use of multi-dose vials increases the risk of transmission of blood-borne pathogens and bacterial contamination. Single dose vials are **ALWAYS** preferred.

APPENDIX VIII

Sample

92. Pre- / Post-Operative Instructions for Oral Minimal Sedation Pre-Operative Instructions:
    a. You will not be able to drive home. You must be accompanied by a responsible adult and may travel by private vehicle or taxi.
    b. Do not eat or drink for 2 hours prior to your appointment.
    c. Take all regular medications at their usual time with sips of water unless you have been instructed otherwise by your dentist or physician.
    d. Wear loose comfortable clothing. Do not wear nail polish. 5. Report any health changes prior to your appointment.

93. Post-Operative Instructions
    a. After your appointment, you must not operate a motor vehicle or hazardous machinery for at least 18 hours. You may be drowsy for the remainder of the day and should not consume alcohol and other drugs with sedative properties or make important decisions.
    b. Depending on your dental treatment, you may need to modify your diet. This will be reviewed with you prior to leaving the office.
    c. If you have any concerns following the appointment, contact the office for advice.

APPENDIX IX

Sample

94. Pre- / Post-Operative Instructions for Oral Moderate Sedation, Parenteral Moderate Sedation, Deep Sedation and General Anesthesia.
    a. Pre-Operative Instructions:
        i. You will not be able to drive home. You must

be accompanied by a responsible adult and may travel by private vehicle or taxi.

ii. Do not eat for 8 hours prior to your appointment. Clear fluids may be taken up to 2 hours before the appointment. This includes water, clear juice and black coffee or tea (no dairy). For afternoon appointments, a light meal may be consumed 6 hours prior to the appointment.

iii. Take all regular medications at their usual time with sips of water, unless you have been instructed otherwise by your dentist or physician.

iv. Wear loose comfortable clothing. Do not wear nail polish.

v. Report any health changes prior to your appointment.

b. Post-Operative Instructions:

i. After your appointment, you must not operate a motor vehicle or hazardous machinery for at least 18 hours. You may be drowsy for the remainder of the day and should not consume alcohol and other drugs with sedative properties or make important decisions.

ii. Depending on your dental treatment, you may need to modify your diet. This will be reviewed with you prior to leaving the office.

iii. If you have any concerns following the appointment, contact the office for advice.

APPENDIX X

Discharge Criteria: Modified Aldrete Scoring System

Parameter	Description of patient	Score
Activity level	Moves all extremities voluntarily/on command	2
	Moves 2 extremities	1
	Cannot move extremities	0
Respirations	Breathes deeply and coughs freely	2
	Is dyspneic, with shallow, limited breathing	1
	Is apneic	0
Circulation (blood pressure)	Is 20 mm Hg > preanesthetic level	2
	Is 20 to 50 mm Hg > preanesthetic level	1
	Is 50 mm Hg > preanesthetic level	0
Consciousness	Is fully awake	2
	Is arousable on calling	1
	Is not responding	0
Oxygen saturation as determined by pulse oximetry	Has level >90% when breathing room air	2
	Requires supplemental oxygen to maintain level >90%	1
	Has level <90% with oxygen supplementation	0

Maximum total score is 10; a score of ≥9 is required for discharge.