

Environmental Risks

Table of Contents

Workplace Injuries	1
<i>Carpal Tunnel & Back Injuries</i>	1
<i>Needle Stick Injury and Eye Wash Procedures</i>	2
Radiology Guidelines	3
<i>The Radiation Health and Safety Act & Regulations Pertaining to Dental Offices</i>	3
<i>Pregnancy and X-Rays</i>	4
<i>Radiation Protection for Office Personnel</i>	4
<i>Radiation Protection for the Patient</i>	4
<i>Quality Assurance</i>	5
Nitrous Oxide	5
<i>What Is Nitrous?</i>	5
<i>What Is Nitrous Used For?</i>	5
<i>Is Nitrous Illegal?</i>	5
<i>What Does Nitrous Do?</i>	6
<i>What Are The Dangers?</i>	6
<i>What Does Nitrous Feel Like?</i>	6
<i>Patient Selection</i>	6
<i>Technique of Nitrous Oxide/Oxygen Administration</i>	7
<i>Monitoring</i>	7
<i>Adverse Effects of Nitrous Oxide/Oxygen Inhalation</i>	7
<i>Documentation</i>	7
<i>Facilities/Personnel/Equipment</i>	8
<i>Occupational Safety</i>	8
Proper Disposal of Dental Materials/Waste	9
<i>2005 Target for Amalgam Waste Management</i>	9
<i>Background on the Canada-wide Standard</i>	9
<i>Requirements and Resources in Saskatchewan</i>	9
<i>Implementation</i>	10
Disposal of Lead foil Film Packages	10
Disposal of Fixer and Developer	10

WORKPLACE INJURIES

CARPAL TUNNEL & BACK INJURIES

In our December, 2003 Survey, SDAA asked questions relative to occupational diseases and chronic pain concerns. The survey had a 66% response rate. We asked about symptoms or conditions that the respondent was experiencing that were presumably work related. The great news was that 38.3% (255) of respondents are feeling great without any work related symptoms. Unfortunately a large number of dental assistants indicated that they had experienced some health concerns. The results are as follows:

- 47.9% reported incidence of back pain due to repetitive back/neck stress (319 individuals)
- 14.5% identified contact dermatitis (97 individuals)
- 13% identified latex allergies (87 individuals)
- 11.2% identified carpal tunnel (75 individuals)
- 0.4% had underwent back surgery for repetitive back strain (3 individuals)

These statistics are of grave concern, for what is a fairly young workforce. SDAA Council has name it a priority to look into these environmental issues and bring forward some recommendations.

Initially, SDAA staff has conducted a fairly extensive search of Workers' Compensation reports, we also asked the WCB to compile statistics relative to dental assisting. There were 76 qualifying dental assistant claims from 2003 to 2005 and the majority claim was "contact with objects & equipment". The second most familiar claim was "bodily reaction and exertion", followed by "falls". Less than 20% of the injuries involved time loss. Given the number of dental assistants practising on a yearly basis these statistics reveal that we are working in a fairly safe environment with very safe workplace habits. Over the same period of time, the WCB claims to have disallowed 5 claims. Of those claims 3 were back – shoulder related, one was a wrist injury and the final disallowed claim was an eye injury.

Latex allergy claims for dental assistants have been accepted by the WCB. Keep in mind that if your health risk negates your further employment in a dental environment, you will be very likely be eligible for a claim and subsequent retraining. Once you have agreed to the conditions, the WCB can insist that you accept any position that gives you a latex safe workplace. You may find yourself working in a much different environment at a very different remuneration scale. This is often extremely disheartening for a dental assistant.

We remain concerned about repetitive stress injuries. By their very nature they are difficult to prove and it seems that for dental assistants these WCB claims are denied. In order to qualify as a repetitive stress injury, the action must be repeated 4000 times in a 8 hour time frame. This would be readily demonstrated by a house framer with a hammer but to this point has not been demonstrated by dental assisting for wrist and back injuries.

The old adage, "an ounce of prevention is worth a pound of cure" may hold a lot of weight in this circumstance. You should consider adjusting seating to minimize back stress or acquiring a better stool. Treatments such as massage therapy, or chiropractic adjustments can make a difference for you. We should all be considering preventative measures; core strengthening will improve your back; consider taking a Pilate's program that is tailored to dental assisting and there are also interactive web based physiotherapeutic routines repeated on a daily basis that can help to deal with carpal tunnel prevention.

What other strategies are available to dental assistants? WCB advises that wrist injuries should be dealt with while they are tendonitis. If you have tendonitis, it will likely not magically disappear. Request your employer to submit a WCB claim (your employer is required to do so by law) and deal with the condition before there is chronic inflammation in the joint. The Board criterion for tendonitis is not as stringent as that of carpal tunnel and you may find that a tendonitis claim offers physiotherapy. This would be a much better choice than allowing the injury to progress to carpal tunnel. Back, shoulder and neck stress should be dealt with in the same manner. Deal with any of these conditions early.

If your injury has developed to the chronic stage and your WCB claim is denied; you should proceed through the appeal process and request "video taping" of your routine workday. Only through videotaping will dental assisting ever make a case to qualify for carpal tunnel coverage similarly to dental hygienists and secretaries.

We also can avoid the financial strain due to being off work as all workers can qualify for Employment Insurance while off work for health related surgeries and recovery time. As with most of life, nothing is risk-free and you are assured a job when you return to work. However, there is no guarantee that you will return to exactly the same position that you left.

There is no perfect job and no perfect workplace. However, if we keep in touch with our bodies and how they are feeling we can go a long way to ensuring that we have a long and healthy career.

NEEDLE STICK INJURY AND EYE WASH PROCEDURES

- Allow bleeding from the wound (to reduce contact with blood or body fluid) [*Note: do not force the wound to bleed*]
- Wash area with soap and water
- Swab wound with antiseptic
- Seek medical care for initial assessment as soon as possible; preferably within 2 hours. You should go to the closest Emergency Room or nearest medical clinic in a rural area.
- The needle should be disposed according to the routine sharp procedure. DO NOT take the puncture needlestick to the emergency.

- For splash occurrences (without abrasion or blood to blood contact); wash skin with soap and water; eyes should be rinsed with water or a saline solution for 5 minutes; mouth should be rinsed for 5 minutes; and the nose should be blown if contaminated.
- As assessed by a physician, post prophylaxis should be started within 48 hours but can be as late as 14 days.
- Future blood work may be required at 6 week, 3 month, 6 month and 12 month intervals as determined by your family physician.
- Report injury to Workers Compensation; by law, all workplace Injuries must be reported immediately
- All workplace injuries need to be documented in records held in the workplace.

RADIOLOGY GUIDELINES

THE RADIATION HEALTH AND SAFETY ACT & REGULATIONS PERTAINING TO DENTAL OFFICES

Plan Approval: Before any person establishes or substantially alters an ionizing radiation installation, an x-ray facility, a plan of the proposed installation or alteration must be submitted to the Radiation Safety Unit for approval.

Equipment Registration: All dental x-ray units must be registered with the department.

Operator Qualifications: Subsection 6(2)(c) of The Radiation Health and Safety Act, 1985, stipulates that x-ray equipment used for the diagnosis or treatment relating to human beings can only be operated by individuals with specific qualifications, including "a dentist, dental assistant, dental hygienist or dental therapist as each is defined in The Dental Disciplines Act". Dental assistants are defined in The Dental Disciplines Act as a "person who is registered as a member of the Saskatchewan Dental Assistants Association". If you are not a registered member, you are not qualified to operate x-ray equipment.

In many dental offices today, you may find lasers used in both hard and soft tissue procedures. Under subsection 28(a)(ii) of The Radiation Health and Safety Regulations, 2005, a qualified class 3 or 4 laser operator is "a dentist who is licensed pursuant to The Dental Disciplines Act". However, subsection 28(b) adds that other individuals may operate the laser "under the direct supervision" of the dentist. There is an expectation that all operators of medical lasers have sufficient training to be competent users.

Safety and Preventive Maintenance (SPM) Inspections: X-ray equipment in dental clinics must undergo periodic SPM Inspections by a qualified person to ensure that the equipment is safe to use. The SPM frequency is outlined in the regulations. A copy of the inspection results is to be left with the owner of the x-ray equipment.

Certification of New Equipment: Prior to turning x-ray equipment over to the owner, the vendor of the equipment must complete an inspection of the electrical and mechanical components and calibration of the x-ray equipment to certify that the unit meets all specifications. A copy of the inspection results is to be left with the owner of the x-ray equipment.

Radiation Safety Precautions: The owner and/or operator must make sure that adequate precautions are taken to ensure that patients, general public and staff are not unnecessarily exposed to ionizing radiation.

Personal Protective Equipment: Radiation safety standards are based on internationally accepted principles of best practice and use of radiation. While there is not one research study that defines an absolute safe minimum for radiation exposure, most regulations are based on the Linear Non-Threshold Model (LNT) that assumes all radiation exposure carries some risk to the individual. However, the regulations are tempered with the ALARA principle, which means to keep radiation exposure As Low As Reasonably Achievable. What is accepted as reasonable is dependent on the type of radiation, the benefit derived from its use, and the amount of burden caused by implementing radiation safety practices.

It is reasonable to ask that a dentist to supply protective equipment for patients, and if required for the operators, since the cost and time of placement is minimal. It is recommended that a lead apron with a thyroid collar be used for intraoral films. Panoramic or cephalometric radiographic exams are usually preformed with a lead apron and no thyroid collar.

For lasers, the primary concern is eye exposure. Reflections from mirrors or stainless steel surgical equipment can cause accidental exposure. All personnel in the laser treatment area including the patient should use safety eyewear of the appropriate protective wavelength. Laser generated air contaminants are typically contained with conventional dental high volume evacuation systems.

PREGNANCY AND X-RAYS

Operators: Any female operator who suspects she is pregnant must inform her employers, as outlined in subsection 8(1) of The Radiation Health and Safety Regulations, 2005. Together the employee and employer can ensure that for the remainder of her pregnancy her duties are compatible with minimum radiation exposure.

Patients: The estimated fetal exposure for a full mouth series is typically given as 1 μ Gy. Although this is a very low exposure, the unborn child is very sensitive to ionizing radiation. Limit radiographic examination during pregnancy to cases with a specific diagnostic indication and use protective lead aprons. Elective procedures may be postponed until the termination of the pregnancy.

RADIATION PROTECTION FOR OFFICE PERSONNEL

The College of Dental Surgeons of Saskatchewan has developed the following guidelines for the safe use of x-rays. The dentist has the responsibility to ensure that proper radiation hygiene procedures are understood and followed by all members of the staff.

- A room must not be used for more than one radiographic procedure simultaneously.
- No person whose presence is not essential may be in the room during an exposure.
- Persons other than the patient must keep as far away as practicable from the primary beam. Personnel must not be exposed to the useful beam. Deliberate exposure for training purposes only must not occur.
- Personnel must take full advantage of the protective devices available.
- If necessary for the operator to be in the room during special procedures, protective clothing must be worn.
- Where possible, film holding devices should be used during exposure. If necessary the patient should hold the film. The operator should not hold the film; if this is necessary (this should not become a habit), protective clothing including gauntlets should be used.
- If weak patients or children need support, holding devices should be used. If parents, escorts, or other personnel are required to assist, they must be provided with adequate protective clothing and be positioned outside of the primary beam. No one person should regularly perform these duties.
- The x-ray housing must not be held by hand during operation. Housings that drift or vibrate excessively should have their supports adjusted.
- All operators of x-ray equipment, personnel who regularly participate in radiological procedures, or others who might receive more than 1/10th of the yearly maximum permissible doses should wear personnel dosimeters. When worn with a lead apron it must be worn under the apron.
- Energized x-ray machines must not be left unattended in a freely accessible location.
- Where radiation doses in excess of 25% of the maximum permissible doses are being received regularly by any one person, appropriate remedial steps must be taken to improve techniques and protective measures.

RADIATION PROTECTION FOR THE PATIENT

One of the largest contributors of man-made radiation exposure of the population is diagnostic radiology. The College of Dental Surgeons of Saskatchewan has developed the following guidelines for the safe use of x-rays. It is the responsibility of the dentist and under direction from him/her, his/her staff, to ensure that patients receive no more radiation than necessary.

- Radiographs should be made only after a clinical evaluation and should be for the purpose of obtaining information not readily otherwise available.
- Radiographs should not be taken on a "routine" basis, but only on the basis of the above (Item 1).

- The dentist should check if recent films are adequate or can be used to alter the type and number of films required. They should be examined at the time of the clinical evaluation.
- When a patient transfers, or is referred from one practitioner to another, relevant films or copies should be forwarded to the new practitioner and be reviewed by him. They can be returned to the first practitioner when they have served their purpose.
- The number of radiographs required should be kept to the minimum practicable, consistent with obtaining the required information.
- The fastest films or screen-film combinations consistent with obtaining the required information should be used. The beam should be well collimated.
- Repeat exposures should not be prescribed merely because the film is not of the "best" diagnostic quality if the radiograph contains the required information.
- The quality of radiographs should be monitored routinely to ensure that they satisfy diagnostic requirements with minimal patient exposure.

QUALITY ASSURANCE

In March 2005, Section 16 of The Radiation Health and Safety Regulations was changed such that dental facilities are now required to implement a quality assurance program to ensure that the diagnostic quality of their radiographs is optimized. Future inspections by the Radiation Safety Unit will include an audit of the quality assurance procedures to ensure compliance with the legislation.

Dental offices can develop their own quality assurance program. As stipulated in subsection 16(2) of the Regulations, the program must "be acceptable to an officer in form and content". Otherwise dental offices can order a quality assurance procedures kit from the College of Dental Surgeons of Saskatchewan that has been approved by the Radiation Safety Unit. This kit contains all the procedures and testing equipment that you will need to be in compliance with the regulations.

NITROUS OXIDE

WHAT IS NITROUS?

N₂O, or Nitrous Oxide, also known as laughing gas, is a weak anesthetic (painkilling) gas that was first synthesized in 1775 by Joseph Priestley. Of the three early anesthetics discovered (chloroform, ether and nitrous oxide) it is the only one still in regular use. While insufficiently strong for surgery, it was ideal for the lesser pain of dentistry. Unfortunately, it became popular as a scientific demonstration for public edification (and entertainment). The public entertainment aspect reduced its respectability and although it was first used in dentistry in 1844, it was not until the 1860s that it became more commonly used.

WHAT IS NITROUS USED FOR?

Common uses of nitrous oxide include surgical, food service and recreational purposes. Many people have experienced nitrous as an anesthetic for dental surgery. Nitrous oxide chargers are also used to make whipped cream. The dairy industry uses nitrous as a mixing and foaming agent as it is non-flammable, bacteriostatic (stops bacteria from growing) and leaves no taste or odour. Nitrous is sometimes used in auto racing to speed combustion. Nitrous is even used in diving to prepare divers for the nitrous-like effects of nitrogen narcosis. It is also a greenhouse gas emitted by fertilizer and implicated in global warming.

IS NITROUS ILLEGAL?

Given its myriad uses, it is not illegal to sell or possess nitrous. However, in the State of California the possession of N₂O with intent to inhale is a misdemeanor: this is probably true of most states. One internet merchant was sentenced to 15 months in prison for selling nitrous with devices intended to facilitate its inhalation.

WHAT DOES NITROUS DO?

Physiological effects last a minute or two for a lungful of nitrous and then mainly dissipate. Some residual effects may last up to several minutes later. Unlike other drugs, the effects of nitrous very rapidly recede. As noted in 1845, "Those who inhale the Gas once, are always anxious to inhale it the second time." When inhaled, nitrous produces a variety of physical effects including:

- Disorientation (both spatial and time-based)
- Fixated vision
- Throbbing or pulsating auditory hallucinations
- Similarly pulsating visual hallucinations
- Increased pain threshold
- Deeper mental connections
- Lowered vocal pitch (opposite of helium)

WHAT ARE THE DANGERS?

The most common dangers from nitrous are due to its disorienting effects and the silliness that surrounds something called laughing gas. Tripping, falling or tipping over in a chair are very common. In one recorded case this caused death. The main cause of death from nitrous seems to be asphyxiation from a bag over the head. Frost bite from the very cold gas is also a concern, especially if dispensing when still disoriented. Use common sense to avoid most problems.

Because nitrous permeates the lipid (fatty) membranes of your body, it can outgas into your gut or middle ear causing an ache. Chronic heavy usage has very unpleasant effects that could be permanent.

WHAT DOES NITROUS FEEL LIKE?

After several deep breaths of air, I inhale nearly a lungful of nitrous and pull some air down on top and then hold my breath. Within seconds, a light tingling can be felt which seems to increase in frequency. The sensation is much as if waves were traveling up your body or as if you were twisting or spinning. Disorientation increases rapidly and the pulsing sounds/feelings increase, wrapping over one another. It is now, with eyes shut, that I enter a dreamlike state, where I am thinking out something and the external world has essentially ceased to exist. The urge to breathe takes over at some point and partial or whole breaths are taken. Open eyes reveal some sort of tunnel vision, with regions of disorientation about the outside. Slowly the throbbing subsides. At other times I experience a sense of paranoia mixed with disorientation. I have a deep conviction while under the influence that all things are cycling together, that there is some deeper cyclical event occurring. It is as an experience of *deja vu* continually occurring. The feeling is profound and not altogether pleasant.

PATIENT SELECTION

Indications for use of nitrous oxide/oxygen analgesia/ anxiolysis include:

- a fearful, anxious, or obstreperous patient;
- certain mentally, physically, or medically compromised patients;
- a patient whose gag reflex interferes with dental care;
- a patient for whom profound local anesthesia cannot be obtained;
- a cooperative child undergoing a lengthy dental procedure.

Review of the patient's medical history should be performed prior to the decision to use nitrous oxide/oxygen analgesia/anxiolysis. This assessment should include:

- allergies and previous allergic or adverse drug reactions;
- current medications including dose, time, route, and site of administration;
- diseases, disorders, or physical abnormalities and pregnancy status;
- previous hospitalization to include the date and purpose.

Contraindications for use of nitrous oxide/oxygen inhalation may include:

- some chronic obstructive pulmonary diseases;
- severe emotional disturbances or drug-related dependencies;
- first trimester of pregnancy;
- treatment with bleomycin sulfate.

Whenever possible, appropriate medical specialists should be consulted before administering analgesic/ anxiolytic agents to patients with significant underlying medical conditions (eg, severe obstructive pulmonary disease, congestive heart failure, sickle cell disease, acute otitis media, recent tympanic membrane graft).

TECHNIQUE OF NITROUS OXIDE/OXYGEN ADMINISTRATION

Nitrous oxide/oxygen must be administered only by appropriately licensed individuals, or under the direct supervision thereof, according to state law. The practitioner responsible for the treatment of the patient and/or the administration of analgesic/anxiolytic agents must be trained in the use of such agents and techniques and appropriate emergency response.

Selection of an appropriately sized nasal hood should be made. A flow rate of 5 to 6 L/min generally is acceptable to most patients. The flow rate can be adjusted after observation of the reservoir bag. The bag should pulsate gently with each breath and should not be either over- or under inflated. Introduction of 100% oxygen for 1 to 2 minutes followed by titration of nitrous oxide in 10% intervals is recommended. During nitrous oxide/oxygen analgesia/anxiolysis, the concentration of nitrous oxide should not routinely exceed 50%. Nitrous oxide concentration may be decreased during easier procedures (eg, restorations) and increased during more stimulating ones (eg, extraction, injection of local anesthetic). During treatment, it is important to continue the visual monitoring of the patient's respiratory rate and level of consciousness. The effects of nitrous oxide largely are dependent on psychological reassurance. Therefore, it is important to continue traditional behavior guidance techniques during treatment. Once the nitrous oxide flow is terminated, 100% oxygen should be delivered for 3 to 5 minutes. The patient must return to pretreatment responsiveness before discharge.

MONITORING

The response of patients to commands during procedures performed with anxiolysis/analgesia serves as a guide to their level of consciousness. Clinical observation of the patient must be done during any dental procedure. During nitrous oxide/oxygen analgesia/anxiolysis, continual clinical observation of the patient's responsiveness, color, and respiratory rate and rhythm must be performed. Spoken responses provide an indication that the patient is breathing. If any other pharmacologic agent is used in addition to nitrous oxide/ oxygen and a local anesthetic, monitoring guidelines for the appropriate level of sedation must be followed.

ADVERSE EFFECTS OF NITROUS OXIDE/OXYGEN INHALATION

Nitrous oxide/oxygen analgesia/anxiolysis has an excellent safety record. When administered by trained personnel on carefully selected patients with appropriate equipment and technique, nitrous oxide is a safe and effective agent for providing pharmacological guidance of behavior in children. Acute and chronic adverse effects of nitrous oxide on the patient are rare. Nausea and vomiting are the most common adverse effects, occurring in 1% to 10% of patients. A higher incidence is noted with longer administration of nitrous oxide/oxygen, fluctuations in nitrous oxide levels, and increased concentrations of nitrous oxide. Fasting is not required for patients undergoing nitrous oxide analgesia/anxiolysis. The practitioner, however, may recommend that only a light meal be consumed in the 2 hours prior to the administration of nitrous oxide. Diffusion hypoxia can occur as a result of rapid release of nitrous oxide from the blood stream into the alveoli, thereby diluting the concentration of oxygen. This may lead to headache and disorientation and can be avoided by administering 100% oxygen after nitrous oxide has been discontinued.

DOCUMENTATION

Informed consent must be obtained from the parent and documented in the patient's record prior to administration of nitrous oxide/oxygen. The practitioner should provide instructions to the parent regarding pretreatment dietary precautions, if indicated. In addition, the patient's record must include indication for use of nitrous oxide/oxygen

inhalation, nitrous oxide dosage (ie, percent nitrous oxide/oxygen and/ or flow rate), duration of the procedure, and post-treatment oxygenation procedure.

FACILITIES/PERSONNEL/EQUIPMENT

All newly installed facilities for delivering nitrous oxide/ oxygen must be checked for proper gas delivery and fail-safe function prior to use. Inhalation equipment must have the capacity for delivering 100%, and never less than 30%, oxygen concentration at a flow rate appropriate to the child's size. Additionally, inhalation equipment must have a fail-safe system that is checked and calibrated regularly according to the practitioner's state laws and regulations. If nitrous oxide/oxygen delivery equipment capable of delivering more than 70% nitrous oxide and less than 30% oxygen is used, an in-line oxygen analyzer must be used. The equipment must have an appropriate scavenging system.

The practitioner who utilizes nitrous oxide/oxygen analgesia/anxiolysis for a pediatric dental patient shall possess appropriate training and skills and have available the proper facilities, personnel, and equipment to manage any reasonably foreseeable emergency. Training and certification in basic life support are required for all clinical personnel. These individuals should participate in periodic review of the office's emergency protocol, the emergency drug cart, and simulated exercises to assure proper emergency management response.

An emergency cart (kit) must be readily accessible. Emergency equipment must be able to accommodate children of all ages and sizes. It should include equipment to resuscitate a non-breathing, unconscious patient and provide continuous support until trained emergency personnel arrive. A positive-pressure oxygen delivery system capable of administering >90% oxygen at a 10 L/min flow for at least 60 minutes (650 L, "E" cylinder) must be available. When a self-inflating bag valve mask device is used for delivering positive pressure oxygen, a 15 L/min flow is recommended. There should be documentation that all emergency equipment and drugs are checked and maintained on a regularly scheduled basis. Where state law mandates equipment and facilities, such statutes should supersede this guideline.

OCCUPATIONAL SAFETY

In an effort to reduce occupational health hazards associated with nitrous oxide, the AAPD recommends exposure to ambient nitrous oxide be minimized through the use of effective scavenging systems and periodic evaluation and maintenance of the delivery and scavenging systems.

PROPER DISPOSAL OF DENTAL MATERIALS/WASTE

2005 TARGET FOR AMALGAM WASTE MANAGEMENT

A 2005 deadline for the Canada-wide Standard on Mercury for Dental Amalgam Waste (CWS) was set and Environment Canada, the Canadian Dental Association and the province of Saskatchewan urge dentists to voluntarily meet the target. The CWS calls for the installation of ISO 11143 certified amalgam separators and other best management practices to reduce releases of mercury from dentistry in Canada by 95% by 2005, from a baseline of 2000.

Managing amalgam waste is an ongoing concern at dental practices across Canada. Most dentists recognize the need to collect their amalgam waste, but may require further guidance about proper disposal of the collected materials.

To help clarify and highlight current dental amalgam waste protocols, Environment Canada has published a new section on its website (www.ec.gc.ca/mercury). The site includes the specific requirements for dental amalgam waste management in every jurisdiction in Canada and offers links to pertinent provincial and territorial documentation, regulations and bylaws.

BACKGROUND ON THE CANADA-WIDE STANDARD

The Canadian Council of Ministers of the Environment (CCME) endorsed the Canada-wide Standard (CWS) on Mercury for Dental Amalgam Waste in 2001 to address mercury releases from dental facilities in a nationally consistent manner. The Canadian Dental Association and Environment Canada signed a Memorandum of Understanding (MOU) committing to actions for the voluntary implementation of the CWS.

Representatives from EC met with CDA in January 2005, to review both parties' role in encouraging the dental profession to voluntarily adhere to the CWS. As a result of this meeting, a random survey of dental offices is planned for 2005 to determine current compliance levels with the CWS.

"CDA encourages its members to install certified amalgam separators in their dental practices," says Dr. Benoit Soucy, CDA's director of membership and professional services. "Separators are an effective tool to prevent mercury release into the environment. Furthermore, if Canadian dentists voluntarily install separators and follow best management practices, it will help prove that Canadian dentistry understands the issue and can effectively regulate itself."

REQUIREMENTS AND RESOURCES IN SASKATCHEWAN

The Saskatchewan government promotes the appropriate management of Dental Amalgam Waste so mercury does not enter the environment. Appropriate management may include landfilling in an approved, confined, engineered landfill with leachate collection systems, recycling to either produce reusable materials such as mercury, silver or copper, or for stabilization/immobilization in a form that may be retired permanently. Saskatchewan intends to achieve a 95 per cent reduction in mercury releases from dental amalgam waste discharges to the environment, by 2005, from the base year of 2000, through "Best Management Practices".

In Saskatchewan, mercury is considered as a toxic substance as per CEPA (1999). This substance is managed under The Dangerous Goods Transportation Act (1985, amended 2003), The Environmental Management and Protection Act (2002) and The Hazardous Substances and Waste Dangerous Goods Regulations (1989).

IMPLEMENTATION

Since the MOU was signed, studies have examined how Canadian dentistry has fared in achieving the goals of the CWS. A national survey reported on the EC website estimated that in 2003, 27% of dentists in Canada used ISO 11143 certified (or equivalent) separators. This resulted in 1,046 kg of mercury entering waste water in 2003. This figure could have been reduced to only 16 kg if all Canadian dental practices had installed separators that meet ISO specifications. Recent indicators show that the 2003 compliance levels will increase as more Canadian dentists voluntarily adhere with the CWS.

When the MOU was signed in 2002, EC likened Canadian dentistry's approach to amalgam waste issues to the preventative approach dentists have taken towards their patients' oral health. CDA agrees with this assessment. "A voluntary; preventative approach is in the best interest of dentistry and the environment,"

Dr. Soucy emphasizes. "The information presented on the Environment Canada Web site makes following the CWS a relatively painless process." Dr. Soucy adds that as long as dentists continue to adhere to the CWS, they can avoid the administrative burden that would accompany regulation and/or dentistry losing its exemption from the reporting requirement of the Canadian Environment Protection Act.

CDA recognizes dental amalgam as a safe restorative material, but acknowledges that dental amalgam waste needs to be recovered to prevent the release of mercury into the environment. Mercury can convert in lakes and water-ways to methyl mercury; a toxic form which accumulates in fish, and in turn in wildlife and humans.

Environment Canada's dental amalgam waste Web site can be found at:
www.ec.gc.ca/MERCURY/DA/EN/da-i.cfm?SELECT=DA .

Here, full-text versions of the Memorandum of Understanding, Canada-wide Standards on dental amalgam waste and the Best Management Practices can be viewed.

DISPOSAL OF LEAD FOIL FILM PACKAGES

CMS Metal Products 909 8th Ave Regina, SK
Phone: 306-352-1200

DISPOSAL OF FIXER AND DEVELOPER

According to Kodak standards, used fixer and developer can be disposed down the drain with running tap water.