SUBMISSION TO:
Health Professions Regulatory Advisory Council

Review of Non-Physician Prescribing and Administration of Drugs Under the Regulated Health Professions Act

COLLEGE OF DENTAL HYGIENISTS OF ONTARIO

November 12, 2008
Response to HPRAC Applicant’s Questionnaire

Introduction ................................................................. 2
Profession Information .................................................... 4
For Professional Associations ........................................... 6
Current Authorized Acts and Regulations ............................. 6
Proposed Changes to Authorized Acts and Regulations ............. 7
Risk of Harm ............................................................... 11
Education and Continuing Competency ................................. 12
Public Interest ............................................................. 15
Prescribing: Drug Regulations Under Professional Acts .......... 18
Collaboration .............................................................. 20
Other Jurisdictions ........................................................ 20
Costs and Benefits ........................................................ 22
Appendices ..................................................................... 24
  Appendix A: Georgian - Medical & Pharmacology Considerations for the Dental Hygienist Syllabus
  Appendix B
    CRDHA: Guidelines for Prescribing and Administering Nitrous Oxide/Oxygen Conscious Sedation in Dental Hygiene Practice
    CRDHA: Guidelines Regarding Prescription and Non-Prescription Drugs in Dental Hygiene Practice
    CRDHA: Restricted Activities Authorization
    CRDHA: Overview
    CRDHA: Elements of Prescribing: A Pharmacy Refresher Course for Dental Hygienists
INTRODUCTION

The College of Dental Hygienists of Ontario (CDHO) came into being in 1994 with proclamation of the Regulated Health Professions Act, 1991 (RHPA) and the Dental Hygiene Act, 1991 (DHA) as the statutory, professional regulatory body for dental hygienists in the Province. In 1994 there were approximately 5,000 dental hygienists registered to practise the profession. In 2008, there are 10,430 registrants. As such, the CDHO is now one of the largest RHPA Colleges.

Last year, the DHA was amended to authorize dental hygienists who are certified by the CDHO to self-initiate their authorized act of "scaling teeth and root planing, including curretting surrounding tissue" (the Authorized Act) pursuant to regulations that came into force and effect on September 1, 2007. This brought the practice of dental hygiene in Ontario more into line with practice in Alberta and British Columbia and with new legislation in Nova Scotia. More importantly, the amendment increased public access to preventive oral health services in venues in addition to traditional dental offices. As of October 15, 2008, 2021 dental hygienists have been authorized by the College to self-initiate. While many of these practitioners have not changed their practice settings, a substantial number are now providing their services in a full or part-time capacity to the homebound, in rural, remote and aboriginal communities, in long-term care homes and in other non-conventional practice settings, exactly as the CDHO predicted if self-initiation were allowed.

The ability of dental hygienists to self-initiate their Authorized Act has enabled dental hygiene to fulfill the objectives of the RHPA related to access and choice. The ability of the dental hygiene profession to fulfill its potential in the healthcare delivery system has historically been constrained. This is partly due to the persistent undervaluation of the importance of the mouth to individuals' overall health and the lack of attention to the oral cavity in healthcare policy-making and in public funding. It is also partly due to the historical fact that dental hygiene has been regulated by dentistry for most of its existence --- the only profession to be regulated by its principal employer group. As a consequence, until recently the dental hygiene profession was restricted in its development by the other profession which was not necessarily in the best interest of the public. Self governance by the dental hygiene profession and the professional independence self-governance brings have opened the door to the dental hygiene profession being able to adjust and expand its scope of practice in order to respond to the public's increasing demand for preventive oral care and the public's right to choose amongst alternate healthcare providers. It is also allowing dental hygienists, for the first time, to provide their services in multidisciplinary and other innovative practice venues and use their competencies to the full in providing efficient, effective and quality dental hygiene care.
The ability of dental hygienists to self-initiate their Authorized Act has enabled dental hygiene to fulfill the objectives of the RHPA related to access and choice. The public now has the option to receive preventive oral health care directly from dental hygienists. As DH practice continues to evolve beyond the traditional private practice model to include a variety of alternate settings, dental hygienists must ensure that there is no decrease in the efficiency and extent of care they provide. This can be accomplished by including in the DHA the ability for dental hygienists to administer substances, prescribe, compound and dispense drugs that are essential to preventive oral care that includes the management of pain and anxiety during dental hygiene treatment and also enhances dental hygienists’ ability to respond to emergencies.

Dental Hygienists currently require other RHPA professionals to authorize the performance of those controlled acts that support self-initiation, but are not yet authorized to dental hygienists. Dental hygienists need no longer practice exclusively with dentists, but must still substantially rely on dentists or other health care professionals to provide or authorize the performance of controlled acts that support self-initiation. The paradigm change, therefore, is incomplete.

Accordingly, the CDHO welcomes HPRAC’s invitation to participate in this review and sees it as another opportunity to help the dental hygiene profession achieve its potential in Ontario’s healthcare delivery system, particularly for those dental hygienists who are self-initiating their authorized act in independent practice, or in other unconventional practice venues where the inability to administer, prescribe and dispense even a limited group of "substances" and "drugs" presents a significant barrier to the delivery of the full range of dental hygiene services and to timely, effective and convenient client care.
PROFESSION INFORMATION

1. Name of the health regulatory college, professional association or organization responding to this questionnaire. If this response is from more than one organization, please list the names of the organizations.

College of Dental Hygienists of Ontario

2. Address/Website.

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3. Telephone and fax numbers.

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4. Contact person (including day telephone numbers and e-mail address).

Fran Richardson Registrar
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registrar@cdho.org

5. List other professions, organizations or individuals who could provide relevant information. Please provide contact names, address and contact numbers where possible.

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Jennifer Burnett - Registrar
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FOR PROFESSIONAL ASSOCIATIONS

6. Names and positions of the senior directors and officers.
   N/A.

7. Length of time the association has existed as a representative organization for the profession.
   N/A.

8. List name(s) of any provincial, national or international association(s) for the profession with which your association is affiliated or who may have an interest in this application. Please provide contact names, addresses, contact numbers and e-mail address where possible.
   N/A.

CURRENT AUTHORIZED ACTS AND REGULATIONS

9. Do current authorized acts and regulations reflect best practices for prescribing or administration of drugs in the course of practice of members of your profession?

   No.

Best practices for dental hygienists, particularly those who self-initiate the Authorized Act in independent practice, call for the enhanced ability to manage client pain or anxiety during performance of dental hygiene interventions. Dental Hygienists currently use topical anesthetic during treatment, but this is not always sufficient to manage sensitivity and pain that may occur during dental hygiene treatment. This would occur through the selective and short-term administration of a limited group of anesthetics and anxiolytics. Dental hygienists in other jurisdictions are authorized to use nitrous oxide/oxygen conscious sedation and local anesthetics for this purpose, which would require access to the controlled act of “administering a substance by injection or inhalation” under the RHPA. The controlled act is also required for dental hygienists to respond to emergency situations, rather than to rely on the RHPA Section 30 (5) exemption.

Dental hygienists currently use various concentrations of Chlorhexidine (CHX) in the course of dental hygiene therapy. The effectiveness of this antimicrobial agent is prolonged when it is used during therapy and on a daily basis by clients who are trying to manage periodontal disease. Clinical studies have demonstrated that gingival tissue responds well to consistent oral self-care with CHX; better than periodic treatment.
delivered at scheduled appointments. Because CHX is a "drug" as defined in subsection 117 (1) of the Drug and Pharmacies Regulation Act, dental hygienists cannot dispense it, in solution or otherwise, for client oral self-care. Accordingly, this prohibition presents a significant obstacle to effective client treatment and long term oral health benefits.

Fluoride has long been established as the main agent used for the prevention of dental caries and is used for treatment of early stages of coronal and root caries. Occasional application of concentrated forms of fluoride is beneficial. Its prolonged use as a daily rinse or at-home treatment, however, is necessary to receive the maximum benefit for individuals at higher caries risk. The ability by dental hygienists to prescribe, compound and dispense fluoride rinses and gels of higher concentration than those typically found in over-the-counter rinses and gels will enhance their ability to manage and prevent the alarming rise in dental caries being experienced primarily in the youth, seniors, immigrant and low income demographic sectors.

The ability to prescribe and dispense a limited number of antibiotics for the treatment of periodontal disease (in consultation with the client's family physician) would also reflect evolving dental hygiene best practices.

Dental hygienists, more than any other member of the oral health care team, advise and assist clients with smoking cessation/tobacco replacement therapies. The components of those therapies often include substances, or dosages of substances, such as Wellbutrin, Zyban and Champix that are categorized as "drugs". The ability to prescribe nicotine replacements would reflect best practices in this regard and would necessitate limited access to the controlled act of "prescribing and dispensing drugs".

PROPOSED CHANGES TO AUTHORIZED ACTS AND REGULATIONS

10. Please describe in detail any proposed changes to current authorized acts and regulations that would reflect best practices for:
   a. Prescribing of drugs by members of your profession, or
   b. Administration of drugs by members of your profession.

Best dental hygiene practices as exemplified by other jurisdictions indicate access to the controlled act of “administering, by injection or inhalation, a substance designated in the regulations” in order to allow dental hygienists to administer substances (including drugs) for -
   - Pain management
   - Client anxiety management
   - Effective emergency response, rather than relying on RHPA Section 30 (5)
Best dental hygiene practices as exemplified in other jurisdictions indicate access to the controlled act of “Prescribing, dispensing or compounding drug in Section 117 (1) of the Drug and Pharmacies Regulation Act” in order to allow dental hygienists -

To prescribe –
- Chlorhexidine
- Fluoride
- Antibiotics (in consultation with the family physician)
- Components of smoking cessation therapies

To dispense self-treatment therapies that include drugs.

To dispense fluoride rinses and gels in concentrations higher than OTC products.

The proposed changes would not necessitate any amendments to either of the two current dental hygiene authorized acts, or to the existing regulations pertaining to those authorized acts under the DHA. As indicated in the response to Question #9, we are asking for the addition of parts of two controlled acts not currently authorized to the profession, namely the ability to administer substances by inhalation or injection and to prescribe, compound and dispense "drugs" as defined by subsection 27-(2) 8. of the RHPA.

11. Why are these changes necessary? What regulatory or clinical practice purposes would be served by such changes? How would they advance patient care and patient safety?

As indicated previously, these changes are proposed in order to support best practices through effective and timely client care and to maximize client convenience and health outcomes. The administration of anesthetic or anxiolytics by injection or inhalation is an important adjunct to independent practice by dental hygienists and will also support more efficient oral care delivery in traditional practice settings. Without access to this controlled act, dental hygienists will usually not be able to perform the Authorized Act for clients who experience pain or anxiety during the performance of the Authorized Act and will have to refer those clients to a dentist, or delay care until a delegation is obtained from the family physician.

The authority to administer substances such as oxygen and Epipen auto-injectors would enhance dental hygienists’ ability to respond to emergencies.

The limited ability to prescribe, dispense and compound selected drugs is an intrinsic component of the self-care and smoking cessation therapies that are developed and recommended by dental hygienists in routine practice.
12. Are the proposed changes considered part of current routine practice of the profession, and authorized to members by medical directives, orders or delegation? Please describe. If authorized by medical directives, orders or delegation, is this approach inadequate or insufficient? Please explain.

In conventional dental practices, dental hygienists routinely use drugs, but may not administer any substance by injection or inhalation without a delegation. Delegation has not proven to be an acceptable means of performing these procedures due to the restrictions imposed by the professions who have the authority to delegate.

The situation is especially problematic for clients of dental hygienists in nontraditional practice, when a dentist or family physician is not available. Achieving the full potential of self-initiation requires the ability for dental hygienists not only to self-initiate their Authorized Act in multiple venues, but also to self-initiate those other controlled acts that are necessary or incidental to the performance of the Authorized Act. Otherwise, dental hygienists in nontraditional practices have to refer a substantial number of their clients to dentists (who may or may not accept the referral), or defer care pending receipt of a prescription or delegation from an authorized prescriber. Neither is in the interests of timely, efficient and effective client care, or client choice.

13. Would the proposed changes result in an enhanced or changed scope of practice for the profession?

We believe that the proposed changes are entirely consistent with the profession's current scope of practice under the DHA (section 3) namely

"... the assessment of teeth and adjacent tissues and treatment by preventive and therapeutic means..."

The CDHO has always considered pain management, periodontal therapy and health promotion to be within the dental hygiene scope of practice.

The proposed changes would constitute an enhancement to dental hygiene practice, but do not (in our view) constitute an expansion or enhancement of the dental hygiene scope of practice, certainly not in comparison to other jurisdictions where dental hygienists may self-initiate the same or analogous acts.
14. Please describe in detail any changes or additions that would be required to the controlled acts that are now authorized to the profession and what, if any, limitations or conditions should be attached to the authorized act.

The proposed changes involve the addition of parts of two controlled acts:

"Administering a substance by injection or inhalation, as prescribed by regulation" (i.e. part of RHPA controlled act 27.(2) 5.)

"Prescribing, dispensing or compounding a drug as defined in subsection 11 7(1) of the Drug and Pharmacies Regulation Act, as prescribed by regulation” (i.e. part of RHPA controlled act 27.(2) 8.)

The regulation under the first proposed authorized act would authorize dental hygienists designated by the CDHO to administer anesthetics and anxiolytics that are commonly used in dental practices, such as nitrous oxide/oxygen and local anesthetics. Only those dental hygienists who have been educated in their administration through a program approved by the College, or who otherwise can demonstrate the necessary competencies to administer them safely and effectively, would be authorized to do so under the regulation. To the best of the College's current information, approximately 300 dental hygienists have provided the College with certificates indicating that they have successfully completed a course in pain management that includes the administration of local anesthetics.

The regulation would also include drugs that normally are found in a dental emergency kit to respond to client emergencies.

The regulation under the second proposed authorized act would authorize dental hygienists designated by the CDHO to prescribe, dispense, or compound a limited range of drugs designated by the CDHO. Only those dental hygienists who have taken the necessary pharmacological training to perform the authorized act safely and effectively would be authorized to do so under the regulation.

In both cases, the CDHO would establish a Standard of Practice, in consultation with the dentistry, medicine and pharmacy professions in order to ensure interprofessional consistency and to support interprofessional collaboration.
15. (a) Has the profession submitted a request to the Ministry of Health and Long-Term Care for changes or additions to the list of drugs that are included in the regulation under the profession-specific act? If yes, please attach copies of the submissions, and indicate when the request was made.
(b) Are there additions or changes, since the submission was made, that HPRAC should now consider? Please describe in detail.
(c) If a formal submission has not been made at this time, what are the exact changes you now propose to current legislation and regulations?

Yes.

The CDHO has previously submitted a request to the Ministry in conjunction with a previous review of the RHPA to grant access to the controlled act of administering a substance by injection or inhalation, in order to provide local anesthesia to clients for pain and anxiety management purposes. The Ministry expressed its wish to move incrementally, namely achieve the amendments to the DHA required to allow dental hygienists to self-initiate the Authorized Act, provide some time for self-initiation to take hold in practice and then move on other controlled acts that are demonstrated to be necessary to support self-initiation.

Since the proclamation of the amendment to the DHA authorizing dental hygienists to self–initiate their Authorized Act, as prescribed by regulation, the fact that 2021 dental hygienists have been certified by the College to self-initiate and many of those are now in, or embarking on, independent or nontraditional practice represents the most significant changes since the Submission was made. The ability to prescribe, dispense and compound drugs and administer substances by injection or inhalation represent the next steps toward full realization of the potential of self-initiation.

RISK OF HARM

16. What additional risk of harm to the patient or client might result from the proposed changes? How would your profession manage this risk?

The CDHO acknowledges that the fact that a procedure has been designated a "controlled act" under the RHPA means that there is a risk of harm. The risk of harm would be effectively mitigated by ensuring only those dental hygienists who have demonstrated the requisite competencies to do so would be authorized to perform either or both controlled act. The substances and drugs authorized for administration, prescription, dispensing or compounding would be restricted to the limited range of drugs designated by the CDHO. The College would establish one or more Standards of Practice pertaining to the
performance of the authorized acts in consultation with the CPSO, RCDSO and the College of Pharmacists.

**EDUCATION AND CONTINUING COMPETENCY**

17. **How does your profession require demonstration of competencies for pharmacotherapy?**

Curricula of the Commission on Dental Accreditation of Canada (CDAC) accredited dental hygiene educational programs includes instruction and application of knowledge related to a variety of drugs. These are taught and evaluated as part of discrete courses and also applied in case studies and during direct client care. Students learn the appropriate use of drugs in dental/dental hygiene care as well as the associated risk factors. In clinical courses students apply this knowledge to treatment planning and care. All of the drugs discussed in this Submission are taught. What is missing is the actual administration of substances for pain management and the writing of prescriptions.

The approved dental hygiene educational programs deliver pharmacology modules that are embedded in clinical practice courses as well as in medical history courses. Graduates' knowledge is tested through the National Dental Hygiene Certification Board (NDHCB) and the schools’ curricula are accredited by the CDAC. In addition, the Proposed Standard of Practice would outline the requirements for authorization by the CDHO.

18. **Please provide pharmacotherapy course content in the current educational curriculum and demonstrate how it ensures the minimum qualifications for the prescribing or administration of drugs by members of your profession.**

The course objectives for pharmacology are attached at Appendix A. In addition, dental hygiene students are required to learn and practise the application of topical anesthetics for dental hygiene care.

In clinical and preventive courses students study chemotherapeutic agents used in prevention of oral diseases including fluoride, CHX and antibiotics and nicotine replacement. Students are also required to learn how to interpret prescriptions written by other members of the health care team. The College would work with the dental hygiene educational programs to expand the existing curricula to develop the necessary competencies for limited administration, prescribing, dispensing and compounding. Courses in dental hygiene programs are available in other jurisdictions for the administration of local anesthesia and nitrous oxide/oxygen, plus a comprehensive module has been developed for the limited prescription of drugs by the College of
Registered Dental Hygienists of Alberta (CRDHA) which has agreed to provide this to the CDHO. Please see Appendix B for materials provided by CRDHA.

19. Does the health professional college require continuing education and training for members to ensure competency in the prescribing or administration of drugs? Please be specific and provide documentation to the extent possible. Please describe how the college ensures its members keep pace with advancements in pharmacotherapy, pharmacology and patient safety.

Registrants would be required to include this component within their continued quality improvement component of the Quality Assurance program.

20. Please indicate what college documents are available to members on the prescribing or administration of drugs, including relevant standards or practice, rules and guidelines. Are these documents current? Please include the documents with the submission.

None of these documents has been developed because the profession does not currently have access to the controlled acts in Ontario. Analogous documents, however, are available from other jurisdictions where dental hygienists may perform them.

21. Please describe current competencies, education and training of members of the profession to perform any of the proposed changes.

The CDHO anticipates that, at least for the foreseeable future, only a minority of practising dental hygienists would be authorized to perform either or both of the controlled acts.

In the case of administering substances by injection or inhalation, approximately 300 dental hygienists have successfully completed courses in the theory and application of the use of anesthetics for purposes of pain and anxiety management during performance of the Authorized Act.

In the case of prescribing, dispensing and compounding drugs, consultations with dental hygiene educators indicate that current programs would need to be expanded to include the prescription of authorized drugs and standards of practice. Additional detail will be available at a later date.
22. Do all members of the profession have the competencies to perform any proposed activity related to the prescribing and/or administration of drugs?

No.

As indicated above, approximately 300 dental hygienists have acquired the competencies to administer substances by injection or inhalation safely and effectively.

The College has no data from which to estimate the number of dental hygienists who have the competencies to prescribe, dispense and compound drugs safely and effectively.

Even in the absence of the addition of the proposed authorized acts, these numbers are expected to increase due to the migration of dental hygienists from other foreign and Canadian jurisdictions where they are authorized and trained to perform the procedures.

23. What effect would the proposed change in the prescribing or administration of drugs have on members of your profession who are already in practice?

a. What additional competencies, education and training would be required for all (or some additional) members of the profession to perform any proposed activity?

b. How will the members become current with the changes, and how will their competency be assessed?

c. What quality improvement or quality measurement programs do you have in place and what additional programs would be put into place?

d. What educational bridging programs will be necessary for current members?

a) We intend to adopt competency and educational standards equal to what is being currently taught in the other Canadian provinces where dental hygienists are authorized to perform both controlled acts. In our view, this represents the standards necessary to serve and protect the public interest in Ontario.

b) Obtaining the authority to perform either or both controlled act would be optional for dental hygienists. We assume that dental hygienists in independent and other forms of non-traditional practice would be most interested in obtaining the authority and, therefore, the necessary competencies. For those who do wish to be authorized to perform either or both controlled act, their competencies will be assessed through a system developed jointly by the CDHO and other interested parties.

c) The College has an established quality assurance program in place that is mandatory for all dental hygienists registered to practise in Ontario. The program includes the monitoring of continuous competency through a peer assessment of continuing education activities and clinical practice. Registrants’ compliance with the standards of practice for
initiating the new controlled acts would be evaluated through this program. No additional changes are required.

d) As indicated, obtaining the authority to perform either or both controlled act will be optional. The College will work with the dental hygiene educational programs to provide the necessary bridging programs. Such programs are already available in other jurisdictions. For example, the dental hygiene programs in Manitoba, Alberta, BC, and Saskatchewan include the administration of local anesthesia. Nova Scotia is currently developing a program as well in anticipation of proclamation of the necessary legislation.

**PUBLIC INTEREST**

24. Describe how the proposed changes are in the public interest. Please consider and describe the influence of any of the following factors or other relevant matters:
   a. Patient safety,
   b. Epidemiological trends in illness and disease,
   c. Access to care and coordination of care,
   d. Wait times for health care services,
   e. Best practices of the profession,
   f. Promotion of collaborative practice, and
   g. Professional competencies not currently recognized.

a) Client safety will in no way be compromised. Only those registrants who meet the requirements set by the CDHO would be authorized to perform either controlled act. Performance of either controlled act will require a thorough medical history in order to identify the most effective course of treatment and any contraindications. It can be argued that client safety will be enhanced because management of chronic disease will increase overall health and more effective management of pain during care will ensure more effective care.

b) Clinical studies show that periodontal disease affects a large --and growing-- percentage of the population. Granting access to the controlled acts of administering substances and prescribing, dispensing and compounding drugs will allow dental hygienists, particularly those in non-traditional practice venues, to play a greater and more effective role in the administration of preventive treatments to counter that trend, including self-help treatment modalities.

c) Access to care would improve, because clients could obtain the full package of care relating to performance of the Authorized Act and the various preventive therapies without the necessity of a referral to a dentist or family physician. Those clients who have chosen to obtain the services of a dental hygienist, including performance of the Authorized Act, should not have to deal with unnecessary barriers to, or unnecessary delays in, the receipt of those services.
d) The mouth is the gateway to the body and oral health a major determinant of overall health. If effective dental hygiene services can be delivered prior to medical care and surgical interventions, delays in surgeries will be reduced. Fewer clients will present to physicians and surgeons with unhealthy oral tissue or immune system challenges that delay, increase the risk of, or absolutely prevent elective surgical procedures such as joint replacements. The same is true for clients who have been prescribed chemotherapy.

e) As indicated elsewhere in the Submission, best practices of the profession would be implemented, as clients would be able to self-administer agents required by a dental hygiene treatment plan, rather than relying solely on applications during scheduled clinical appointments. Best practices within the dental hygiene profession are manifested by British Columbia and Alberta where practitioners have access to analogous "restricted acts".

f) The proposed changes would have no adverse impact on collaborative practice, but would allow dental hygienists to participate more fully in interprofessional healthcare delivery venues where physicians or dentists are unavailable.

g) The dental hygiene profession has demonstrated the necessary competencies in Alberta, British Columbia, Saskatchewan, Manitoba, over 40 States in the USA, the UK, Europe and New Zealand. In addition, several hundred dental hygienists have the competencies to administer substances by injection or inhalation in Ontario, but are unable to apply those competencies in today’s health care system.

25. How would the proposed change affect other health professions? The public? Describe the effect the proposed change in the prescribing and/or administration of drugs might have on:
   a. Health human resources,
   b. Enhancement of quality of services,
   c. Access to services,
   d. Service efficiency,
   e. Interprofessional care delivery, and
   f. Other impacts.

a) Granting dental hygienists access to the two controlled acts as proposed can be expected to have a marginally positive impact on health human resources, by avoiding the need for referrals to dentists and family physicians and also by avoiding the inherent duplication of effort involved in multiple assessments/diagnoses of clients in order to initiate or complete treatment.

b) Being able to administer limited anesthetics to address pain and anxiety during performance of the Authorized Act and being able to prescribe, compound and dispense drugs to support client self-care programs will substantially increase quality of care. If
granted access to the controlled acts, dental hygienists will be able to provide clients with medications, rinses and gels to improve oral care between clinical appointments and provide pain and anxiety management during dental hygiene services. Pain management improves the response to services because clients are more likely to have a less unpleasant experience and, therefore, will be more likely to return at prescribed intervals for dental hygiene care, thereby improving the overall outcomes of oral health care.

c) The fundamental rationale behind allowing dental hygienists to self-initiate their Authorized Act was to enhance access to services. Experience over the last year has validated that rationale, as dental hygiene services are increasingly being made available to people who could not, or would not, visit conventional dental offices because of mobility, proximity, cost or other barriers. That trend will accelerate as the healthcare delivery system and the public become more familiar and comfortable with the new delivery model.

The proposals in this submission are designed to support the new model, by making it more effective and by making it applicable to more people. Put another way, the proposals will increase the number of people who can access dental hygiene services, including the performance of Authorized Act, through the new delivery model.

Even in conventional dental clinics, access to the two controlled acts as proposed will allow dental hygienists to provide local anesthetic to their clients when needed, even when a dentist isn't present, thereby increasing the efficiency and accessibility of care in conventional dental clinics, as well.

d) There are compelling arguments for enhanced service delivery presented throughout this Submission. In summary: Providing dental hygienists access to the two controlled acts:

• **In conventional dental offices**, will increase the efficiency of care by allowing dental hygienists to use local anesthetics during dental hygiene procedures when the dentist is not on site.
• **In non-traditional practice venues**, will reduce the need for referrals to dentists and family physicians and the resultant delays in care and duplication of effort.
• **In all practice venues**, will increase the efficiency and effectiveness of dental hygiene care by, for example, supporting client self-care.

e) The proposals will not impact negatively on interprofessional care, but will encourage and allow for the integration of dental hygienists into multidisciplinary practice models that may not include dentists (which most don't) or other authorized prescribers.
26. Are members of your profession in favour of the proposed changes? Please describe any consultation process and the response achieved.

Yes.

As a general rule, the dental hygiene profession is increasingly supportive of anything that allows members to practise to their full competencies and to exercise personal choice in where, how and with whom they practise their profession. Those dental hygienists who currently have the competencies to perform either or both of the proposed authorized acts, but are currently unable to do so in Ontario, are particularly keen to see the changes implemented.

The Ontario Dental Hygienists’ Association has indicated full support to the CDHO for the proposals in this Submission. The Canadian Dental Hygienists Association has supported similar initiatives in other provinces.

PREScribing: Drug Regulations UNDER PROFESSIONAL ACTS

27. Please describe challenges faced by members of the profession as a result of listing specific drugs in regulation schedules made under the profession-specific act.

Because dental hygiene does not currently have access to the two proposed authorized acts, we have no experience with the practice of listing specific drugs in regulation. Nevertheless, we have heard about the experience of other RHPA Colleges, most notably the College of Chiropodists, that encountered major delays in obtaining approval for their drug lists, or for changes to their drug lists. This would appear to us to be a major obstacle to the implementation of best practices reflected by using the most appropriate drug intervention available, rather than being constrained by the minutiae of a drug list.

We are also concerned that drug lists quickly become out of date and excessively restrictive.

28. If classes of drugs, rather than a list of specific drugs, were included in the proposed regulations, please describe how this would impact the members of the profession and the college. What, if any, additional education and training, competency review, or updates to clinical guidelines or standards or practice would be required?

Without practical experience in the area, we can only respond theoretically. It would seem to us far more efficient and responsive to pharmacological innovation if categories of drugs, rather than detailed lists, were used for regulatory purposes. Lists that specify individual drugs would quickly become outdated and would interfere with practitioners' ability to avail themselves of the latest, but proven, innovations in pharmacology.
Categories, rather than lists, are used by dental hygiene regulators in other jurisdictions such as Alberta.

29. If classes of drugs, rather than a list of specific drugs were included in the regulation, what conditions should be attached, if any, to the classes? Should the broad purpose, indications, or some other reference be specified (e.g. for pain relief in labour; for smoking cessation; for treatment of sexually transmitted diseases; in emergency; refill). Please comment in detail.

In the case of dental hygiene any drugs administered by injection or inhalation would be limited to the management of pain and anxiety.

30. If classes of drugs, rather than a list of specific drugs were included in the regulation, how would you classify the drugs for your profession? Are there circumstances where a drug class would not be appropriate in a regulation schedule for the profession? Are there situations where a combination of class and list of specific drugs would better respond to the competencies of the profession?

The classifications we would recommend for the dental hygiene profession are:

- Fluorides
- Oral rinses
- Topical agents
- Anesthetics
- Smoking cessation
- Antibiotics
- Anti fungal
- Ant infective
- Anti viral
- Epinephrine
- Bronchodilators
- Topical corticosteroids
- Nitrous oxide/oxygen conscious sedation
- Contents of Emergency Kit

- Pain control – Aspirin Ibuprofen Tylenol
31. If applicable, please describe in general your profession’s experience with requests for changes to drug regulations, including specifics of the requests made, regulation changes that followed, if possible the time required for changes to regulations, and what, if any, proposed changes were, or were not, approved by government.

Because the profession does not have access to the controlled acts involved, the CDHO has no direct experience in processing a drug regulation.

COLLABORATION

32. Do members of your profession practice in a collaborative or team environment where a change in drug regulations or legislation would contribute to multidisciplinary health care delivery? How would relations between professionals working in a team be impacted? What additional standards would be required (e.g. record-keeping, referral protocols)? Please describe any consultation process, agreements or other arrangements that have occurred with other professions.

The majority of dental hygienists continue to practise with dentists and dental assistants in conventional dental practices. Oral health and the practitioners who provide it have tended to operate in their own "oral health" silo, somewhat separate from the rest of healthcare delivery, because preventive oral health tends to be disconnected from healthcare delivery in general. Nevertheless, some dental hygienists provide assessment and treatment services in association with other healthcare providers and a growing number are providing those services in long-term care homes and in other venues in collaboration with other health care providers.

Last year's amendment of the DHA allows dental hygienists to break out of the silo and practise in non-traditional venues, including in multidisciplinary practices. This trend is resolutely encouraged by the College. A recent illustration is a pilot screening project for young children entering school conducted under the auspices of the York Region District School Board and sponsored in part by the CDHO. In the pilot project, dental hygienists screened children alongside opticians and nutritionists for the first time. Next year, it is anticipated that audiologists and speech language pathologists -- and perhaps podiatrists -- will be involved as well.
33. Describe any obligations or agreements on trade and mobility that may be affected by the proposed changes for the profession. What are your plans to address any trade/mobility issues?

The CDHO is currently in talks with dental hygiene regulators from other provinces as part of the Agreement on Internal Trade.

34. What is the experience in other Canadian jurisdictions? What is the experience in international jurisdictions?

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Administer Anesthetics</th>
<th># of Practitioners</th>
<th>Since (Year)</th>
<th>Prescribe, Dispense, Compound, Drugs</th>
<th>Since (Year)</th>
<th># of Prac.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Mandatory</td>
<td>1976</td>
<td>No</td>
<td></td>
<td></td>
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<tr>
<td>Alberta</td>
<td>Yes</td>
<td>Majority</td>
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<td>Yes</td>
<td>2007</td>
<td>First class just graduated</td>
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<tr>
<td>Saskatchewan</td>
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<td>Mandatory</td>
<td>1998</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Optional</td>
<td>1996</td>
<td>No</td>
<td></td>
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<tr>
<td>Québec</td>
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<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>Legislation to be Enacted</td>
<td>Optional</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newfoundland &amp; Labrador</td>
<td>Legislation in Process</td>
<td>Optional</td>
<td></td>
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<td></td>
<td></td>
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<tr>
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<td></td>
<td></td>
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<tr>
<td>Northwest Territories</td>
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<td></td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nunavut</td>
<td></td>
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</tbody>
</table>

To the best of our knowledge, there has been no disciplinary action taken against dental hygienists for any misadventures as a consequence of performing these activities.
35. What are the potential costs and benefits to the public and the profession of the proposed changes? Please consider and describe the economic impact, costs and benefits to:

   a. Patients,
   b. Broader health care service delivery system,
   c. Educational sector,
   d. Regulatory sector, and
   e. The profession

a) Dental hygiene services provided in independent practice or in other non-conventional venues generally average 30% less than the charges for the same services provided in conventional dental offices. This, together with convenience, constitute the largest attractions for "independent" dental hygiene services. Furthermore, members of the public who choose to obtain their preventive oral services from dental hygienists and non-conventional practices will be able to obtain a wider range of services without the inconvenience associated with referrals to other health care practitioners.

b) Fulfilling the full potential of "self-initiation" will help make the delivery of oral healthcare care, particularly the preventive care in which dental hygienists specialize, more accessible. Reducing the need to refer to dentists, who may or may not except those referrals, reduces duplication of effort and supports timely access to and completion of treatment. Reducing the number of times dental hygienists need to obtain physician referrals or physician delegations helps to reduce the demands on physicians' time and also reduces the duplication of professional effort in performing multiple assessments and diagnoses.

c) There will be additional demands on the educational sector to provide the educational programs necessary to bridge and upgrade dental hygienists, particularly to perform the prescribing function. It is anticipated, however, that those educational programs can be easily adapted from other jurisdictions, thus mitigating start up costs. Currently many elements of the proposed authorized acts and taught at a didactic level, meaning only the clinical component would have to be added. Within a diploma program the cost would come from the introduction of a specific course on local anesthesia. The cost for the educational Colleges would come mainly from the marginal costs of faculty to teach the course and staff the clinical practice. For most educational colleges, the incremental cost is estimated to be approximately $10,000 annually. If the course were provided outside of the current diploma program (e.g. continuing education) the cost would be higher because of the additional expenses associated with promotion and facility use, however, any continuing education program would likely be run on a cost recovery basis, meaning the profession would bear the cost. If the national competencies are adopted, then schools would need to review their programs globally and these elements would automatically be included.
d) There will be additional work for the regulators, particularly the CDHO, in developing and enforcing the regulations, Standards of Practice and guidelines necessary to support effective regulations of the proposed authorized acts. This additional work will, however, be more than offset by the public benefit.

e) The members of the profession are expected to embrace the changes because it will allow them to reflect best practices in other jurisdictions, to continue to evolve, to be better able to function in unconventional practice venues and to use their professional competencies to the fullest.
APPENDIX A

GEORGIAN
YOUR COLLEGE · YOUR FUTURE

Dent 1021
Medical & Pharmacology Considerations for the Dental Hygienist

Course Syllabus
2008, Fall
Dr. Robert Sullivan

OFFICE: C119J
OFFICE HOURS: As per appointment book outside office
OFFICE PHONE: ext
E-MAIL: dhurst@georgianc.on.ca
CLASS HOURS: Wednesdays

A. Course Description
This course examines the use of pharmaceuticals to treat general and oral health problems. The study of drugs used in dental treatment will include consideration for their origin, physical and chemical properties, modes of administration and effects on the body system. In addition, the impact of client medication (prescribed or over-the-counter) on oral structures and treatment will be discussed. Pain management will also be examined. The course also considers the management of clients with various medical considerations.

B. Prerequisites/Co-requisites
None.

C. Course Organization
This course is delivered in a 3 hour block. Information is delivered in lecture format followed by classroom activities applying the information through the use of practice exercises and case studies. The course of study begins by looking at systemic medical conditions and emergency risk assessment associated with these conditions. After learning the principles of pharmacology, the course then moves to study the pharmacology used to treat those conditions and the impact these drugs may have on dental hygiene care. The course then switches focus to examine the drugs used in dentistry, the interactions these drugs may have with the systemic drugs the client is taking and the impact of drugs on the oral tissues. The last unit of study examines the occupational risks associated with the use and storage of drugs.
D. Course Objectives

Upon completion of this course, you will have reliably demonstrated the ability to:
1. explain the action and interaction of drugs and drug groups commonly prescribed for medical and dental purposes;
2. describe the signs of abuse of prescription, recreational, and over-the-counter drugs;
3. describe orofacial pain and factors that contribute to perception of pain or a pain reaction;
4. examine the use of topical, local, nitrous oxide/oxygen and general anaesthetic for dental purposes – including associated risks and benefits to clients and dental personnel;
5. discuss the impact on the body of multiple drug usage (prescribed and over-the-counter);
6. describe oral manifestations that occur as a consequence of drug use;
7. describe the impact of various medical conditions on dental hygiene care.

E. Course Topics

In dealing with a population that has an extremely varied range of age, physical conditions, and health histories, it is important that the student learn to complete a comprehensive evaluation of conditions and their related systemic drug use noted on a medical history. This is in an effort to prevent medical emergencies and recognize any potential that may require an alteration in dental hygiene treatment.

Medical/Dental Emergencies in the Dental Office
1. Medical conditions and assessing emergency risk in a dental office
2. Recognition, control and prevention of the following systemic medically related emergencies: endocrine, cardiac, seizure, respiratory and allergic.
3. Differentiate between unconscious, altered conscious and conscious emergencies
4. Recognition, control and prevention of the following dentally related emergencies: syncope, drug related, allergic reactions and haemorrhaging
5. outline the clotting process and discuss the agents, action and use of drugs that facilitate and hinder this process;

Terminology & Principles of Pharmacology
1. the study of pharmacology as it relates to dentistry;
2. distinguish between the categories of group drug actions.
3. examine the factors that affect client reaction and response to drug administration
4. differentiate between effective dose and lethal dose of a drug
5. explain the physiology of an adverse drug reaction
6. the components, short forms and management of prescriptions;
7. explain the factors that can affect the drug dosage prescribed.
8. briefly discuss the principles and list the possible mechanisms of drug action;
9. examine the pharmacokinetics of drugs
The impact of systemic drug use on dental treatment
1. use a dental drug reference to evaluate specific drugs used and become aware of the associated dental considerations
2. examine the most common drug groups, cross-reference these drugs with the medical conditions for which they are prescribed and the list the most common drug induced oral side effects
3. discover considerations from the drug groups that may require alterations in dental hygiene care plans
4. recognize the potential for and discuss how to prevent any medical emergency related to the drug

Drugs used in dentistry:

Pain Management and anxiety management
1. discuss the physiology of pain and outline the associated drug groups used to treat
2. define the terms analgesic and analgesia;
3. differentiate between the analgesics
4. state the desirable properties and mechanism of action in local anaesthetic;
5. describe the chemical composition in local anaesthetic;
6. outline the reactions to and toxic levels of local anesthetic
7. describe the purpose and use of topical anaesthetics including those of a palliative nature;
8. describe the use and administration of general anesthetics in dentistry
9. describe the administration, properties and mechanism of action of Nitrous Oxide/oxygen
10. recognize the occupational hazards associated with the use of nitrous oxide/oxygen
11. discuss common oral conditions for which analgesics, anesthetics, sedatives and corticosteroids are prescribed

Anti infectives
1. define the terminology related to anti-microbial agent
2. outline the ideal characteristics of anti infective agents
3. discuss the allergy potential of the antibiotic drugs;
4. explain the prophylactic antibiotic regimen;
5. discuss common oral conditions/infections for which these drugs are prescribed

Drug Interactions
1. discuss the basic premise of drug interaction and the effects of multiple drug administration;
2. explain how the various drug groups interact;
3. discuss the reaction of the fetus to drugs used in dentistry
4. discuss the use and possible implications of homeopathic remedies to the health history
5. list the pharmacy used to treat drug induced oral side effects

Drug awareness in the Dental Office Environment
1. distinguish between the various CNS stimulants
2. differentiate between addiction and habituation;
3. recognize the names of the drugs most commonly abused;
4. recognize the signs of drug abuse;
5. utilize interpersonal skills to safeguard against the possible manipulation of dental personnel by drug addicts.
6. recognize and explain the occupational risks and potential for abuse associated with storing drugs in the office

F. Text and Required Resources

Course Syllabus. Georgian College Press.
Elena Bablenis Haveles (Applied Pharmacology for the Dental Hygienist 5th edition)
Darby & Walsh. (Dental Hygiene: Theory and Practice.
Mosby’s 2007 Dental Drug Consult

G. Evaluation Methods

The pass grade for this course is 50%.

The evaluation will be weighted as follows:

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>TESTS/QUIZZES</td>
<td>40%</td>
</tr>
<tr>
<td>CASE STUDY ASSIGNMENT</td>
<td>20%</td>
</tr>
<tr>
<td>FINAL EXAM</td>
<td>40%</td>
</tr>
</tbody>
</table>

Recorded grades are available for you to review at a convenient time. Should you wish to review your grades or discuss your progress make an appointment. Term tests and assignments are returned the next class. Final evaluations will not be returned and are retained by the program for one year.

Except in cases of actual error, final grades are permanent. Course extensions are a privilege and will only be granted in extreme circumstances, provided you are passing all work at the time of the request. Refer to the Academic Practices and Procedures for more specific details regarding incomplete courses.
H. Course Policies

a. Attendance, lateness
   Students tend to be more successful if they attend classes and the class is enriched by everyone’s participation. Should you choose not to attend, you must also accept responsibility for ensuring you are meeting the learning outcomes of the course.

   Arriving late for a class can be very disruptive to those who arrived on time. The door will be left open for the first 10 minutes of the class. If you do arrive late and the door is closed out of respect for those who have arrived on time please wait for a break to enter.

   While attendance is not factored into the course evaluation, extensions for course work will not be given to individuals who are habitually away.

b. Class participation
   It is assumed that you are in this course because you want to learn. The faculty expects that you will take an active role in class by contributing to discussion, seeking assistance when required and being prepared.

c. Missed exams or assignments
   If you miss an exam or test because of illness or an emergency situation you must make every attempt to contact the faculty prior to test time and provide appropriate documentation upon returning to class.

d. Plagiarism statement
   Georgian College has a license agreement with a web-based software company to detect plagiarism and cheating. For more details, see Academic Rights and Responsibilities and Academic Misconduct of the Academic Policies section in the Georgian College calendar.

   To check the originality of assignments, faculty have the right to request work in electronic format and to submit students’ work to detect plagiarism and cheating. Students may be required to check their work electronically before submission to the faculty.

   After submission, assignments will be part of the software system’s database.

e. Academic dishonesty
   You are responsible for presenting your work honestly and preventing the dishonest use of your work by others. Refer to the Colleges Academic Practices & Procedures for complete details on academic dishonesty.
f. Human rights
All students, teachers and clients have the right to a learning environment that is free of conflict, distraction and prejudice. If you feel your learning is being jeopardized by the actions of another student, you need to speak to your clinical instructor immediately so the problem can be resolved. If you are interfering with the rights of other students, teachers or clients you will be removed from the class/clinic until the situation can be investigated and resolved. Time missed because of removal from clinic will not be replaced. Refer to the College’s Academic Practices and Procedures for more specific details.

g. Freedom of information and protection of privacy
To ensure your privacy, College staff is unable to release any information about you without your written permission. If someone is calling the college for you, they must provide their name and your student number. We will not discuss your attendance or academic performance with anyone unless you have authorized this in writing. This includes parents and partners.

h. Essays, major papers
All written assignments must be completed using APA format. If you are unfamiliar with APA, you should refer to Sites and Sources, a Georgian College publication or visit the Write On Centre for assistance.

i. Classroom Rules of Conduct
   a. No cellular phones are allowed in class/lab.
   b. Class time is to be spent on relevant class work.
   c. Students are expected to come prepared to participate actively in class
   d. Food and beverages are normally not permitted in the classroom, however exceptions will be made provided the room is left tidy.

j. Available Support Services
There are a number of support services in the College if you are experiencing difficulties. For personal issues you can arrange an appointment with the Counsellor. For academic issues see your teachers first and they will be able to assist you or provide a referral to the appropriate services.

Emergency Procedures
   a. Evacuation procedures – see instructions posted in the classroom.
   b. First aid kit – there is a first aid kit at Campus Connections and in the upper level of the Clinic.
   c. Emergency ambulance – from the nearest phone, dial “9” to get an outside line, then “911”. Refer to the Clinic Procedural Manual for details regarding emergencies in the clinic.
   d. Campus security – should you require campus security or wish an escort to your care, use any internal phone and dial 3030.

Good Luck and enjoy the course.
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Assigned Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Orientation Day  &lt;br&gt;Classes Cancelled</td>
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</tr>
<tr>
<td>2</td>
<td>Medical conditions: cause for emergency risk assessment.  &lt;br&gt;Introduction to Pharmacology  &lt;br&gt;Use of drug reference book- &lt;br&gt;Review medication summaries</td>
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<td>Chapters 2, 3, 4,</td>
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<td>Chapters 15, 16, 21</td>
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<td>Chapters 18, 22</td>
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<td>6</td>
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<td>Chapters 17, 19, 20,</td>
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<td>Test 20% &lt;br&gt;Discuss and assign case study assignment</td>
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<td><strong>STUDY WEEK</strong></td>
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<td>8</td>
<td>Drugs used in dentistry: Analgesics, Anti anxiety  &lt;br&gt;<strong>Take up test</strong></td>
<td>Chapters 5, 6, 7, 11</td>
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<td>9</td>
<td>Pain management during dental/dental hygiene care</td>
<td>Chapters 10, 12</td>
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<tr>
<td>10</td>
<td>Drugs used in dentistry: Anti infective, antiviral, antifungal agents  &lt;br&gt;Common agents to treat oral lesions</td>
<td>Chapters 8, 9, 14</td>
</tr>
<tr>
<td>11</td>
<td><strong>Morning Class</strong> 9:00 – 12:00:  &lt;br&gt;Drug interactions, drug induced oral side effects, drug induced vitamin deficiencies  &lt;br&gt;<strong>Afternoon Class</strong> 1:00 - 4:00  &lt;br&gt;Case study assignment due @ 1:00  &lt;br&gt;Case study presentations  &lt;br&gt;Test 20%</td>
<td>Chapters 13, 14, 24, 25  &lt;br&gt;Appendix E, F</td>
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<td>Dr. Hurst away – No class</td>
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</tr>
<tr>
<td>13</td>
<td>Occupational risks, dental emergencies, emergency drugs  &lt;br&gt;<strong>Take up test and review for upcoming final exam</strong></td>
<td>Chapters 23, 26</td>
</tr>
<tr>
<td>14</td>
<td>Final exam 40%</td>
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</tbody>
</table>
APPENDIX B

Please see PDF Attachments - -

Appendix Ba_CRDHA_Guidelines for Prescribing and Administering Nitrous Oxide/Oxygen Conscious Sedation in Dental Hygiene Practice

Appendix Bb_CRDHA_Guidelines Regarding Prescription and Non-Prescription Drugs in Dental Hygiene Practice

Appendix Bc_CRDHA_Restricted Activities Authorization

Appendix Bd_CRDHA_Overview

Appendix Be_CRDHA_Elements of Prescribing: A Pharmacy Refresher Course for Dental Hygienists
Guidelines
for Prescribing
and Administering
Nitrous Oxide/Oxygen
Conscious Sedation
in Dental Hygiene
Practice

Approved by CRDHA Council
November 2006
Revised April 2008
# Table of Contents

Introduction .......................................................................................................................... 1  
Key Elements of These Guidelines ................................................................. 2  
Definitions .......................................................................................................................... 2  
General Guidelines for the Utilization of  
Nitrous Oxide/Oxygen Conscious Sedation ................................................. 6  
Procedural Guidelines for the Administration of  
Nitrous Oxide/Oxygen Conscious Sedation ................................................. 7  
Facilities and Equipment Guidelines.............................................................. 9  
Personnel ......................................................................................................................... 10  
Monitoring Procedures ................................................................................................. 11  
Documentation............................................................................................................... 13  
Appendix A (Policy Regarding Courses) ............................................................ 15  
Appendix B (Recommendations for Controlling Exposure).................. 16  
Appendix C (ASA Physical Classification System)................................. 17  
Appendix D (Preoperative Physical Evaluation)........................................ 23  
Appendix E (Record-keeping & Monitoring Recommendations)........ 24  
Appendix F (Recognition Request Form) ......................................................... 26  
Appendix G (Published CSA Standards for Equipment)......................... 27  
Appendix H (Registration of Dental Hygiene Facilities).............................. 28  
References ......................................................................................................................... 29

Approved by CRDHA Council Nov. 2006
Revised by CRDHA Council April 2008

Edmonton, Alberta
Planned Review Date: Nov 2011

This guideline will be updated and new evidence evaluated every 5 years, at a minimum. If indicated by the presence of new strong evidence prior to this, the guideline will be reviewed at an earlier date.
Introduction

Registered dental hygienists in Alberta strive to provide Albertans with optimal dental hygiene services based on individual client need. The registered dental hygienist manages client pain, anxiety and fears.

In Alberta, dental hygienists have been utilizing nitrous oxide/oxygen conscious sedation in the course of dental hygiene practice since the 1970’s. Under the Health Professions Act, prescribing and administering nitrous oxide/oxygen conscious sedation is considered a restricted activity. Dental hygienists who have met the CRDHA education and experiential requirements, (refer to Appendix A), may be authorized to perform this restricted activity.

Once members have successfully completed a program that meets these requirements, members must complete the CRDHA Nitrous Oxide/Oxygen Conscious Sedation Education Recognition Request Form (Appendix F) and submit the completed form to the CRDHA office. Applicants will be notified in writing once their application for authorization to perform this procedure has been reviewed.

Inhalation sedation with nitrous oxide has proven to be an extremely effective and safe technique for the reduction of stress in the apprehensive or medically compromised client. The following guidelines are intended as a decision-making aid to support registered dental hygienists in providing clients with the benefits of nitrous oxide/oxygen conscious sedation in a safe and effective manner.

These guidelines are dynamic and are intended to reflect current best practices in relation to the provision of the restricted activity of nitrous oxide/oxygen conscious sedation by registered dental hygienists. Clinical practice guidelines are designed to assist the practitioner in decision-making. They are designed to enhance, not replace, clinical judgment or expertise. It should be recognized that there may be emergency situations that may require that these guidelines be modified on the basis of the judgment of the practitioner(s) responsible for the delivery of nitrous oxide/oxygen conscious sedation. It should be also recognized that there may be certain situations whereby these guidelines may be clinically impractical, (e.g. combative client) and that adherence to the guidelines is no guarantee of a successful outcome.

In many instances, these guidelines reflect minimum standards. While variations may be warranted based on the needs of the individual client or practice, registered dental hygienists are cautioned that failure to follow these guidelines may constitute a breach of one or more Standards of Practice, which is “unprofessional conduct.” Dental hygienists employing the modality of nitrous oxide/oxygen conscious sedation must be familiar with these guidelines, be appropriately educated and regulate their practice accordingly.
Key Elements of These Guidelines

1. Meet legislated requirements both provincially and nationally.
2. Be consistent with professional standards and guidelines for the protection of the public.
3. Adhere to accepted standards of practice regarding nitrous oxide/oxygen conscious sedation.
4. Utilize, as appropriate, nitrous oxide/oxygen conscious sedation to optimize the outcome of dental hygiene care.
5. Collaborate with physicians, pharmacists, dentists, and other health professionals as necessary.

Definitions

TERMS

Administer: To supply a dose of a drug to a person for the purpose of immediate ingestion, application, inhalation, insertion, instillation or injection. In the case of nitrous oxide/oxygen conscious sedation, it is the act performed by the person who is responsible for making the decision to initiate sedation and/or adjust the flow of gases.

Adverse Outcome: A harmful event for a client or personnel, where transfer to hospital with or without admission was necessary. In the event of a critical incident or adverse outcome of any kind, a written incident report must be completed and reported to the CRDHA forthwith. (Refer to pg. 7: Practice Guidelines: Section 11 for details on the incident report.)

Agent: A parent or guardian legally authorized to act on behalf of a client.

Continual: Repeated regularly and frequently in a steady succession.

Continuous: Prolonged without any interruption at any time.

Critical Incident: An event creating a substantial risk of serious health or safety consequences. In the event of a critical incident or adverse outcome of any kind, a written incident report must be completed and reported to the CRDHA forthwith. (Refer to pg. 7 - Practice Guidelines: Section 11 for details on the incident report.)

Drug Profile: The drug profile is part of the client’s comprehensive health history and is completed for each client prior to initiating dental hygiene care. The client’s drug profile, which is used to develop a care plan, aids the registered dental hygienist in determining possible contraindications and adverse effects, such as drug/drug and drug/food interactions. The drug profile includes:

- a comprehensive list of drugs (prescription and non-prescription) that the client is currently taking, or has taken, since the last update of the client’s health history. Non-prescription drugs must include drugs listed in Schedules 2 and 3 of Alberta’s Drug Schedules, unscheduled...
drugs, alcohol, tobacco, and natural health products not encompassed in the provincial drug schedules.

- Adverse drug reactions (e.g., known allergies or sensitivities)
- Client compliance

**Health History:** A complete and thorough legal document that contains information about the client’s past and present medical and dental conditions, risk factors for disease, a drug profile, undiagnosed conditions and allergies or sensitivities. The health history should also include information about the client’s lifestyle; cultural practices related to health and disease, past and present emotional problems, and general state of mind. This written report is obtained from the health history questionnaire, a verbal interview, and direct client observation.

**Immediately available:** On-site in the facility and available for immediate use.

**Informed Consent:** The client has been provided with information about the proposed treatment, including material effects and costs, significant risks and side effects of the proposed treatment, alternative treatments and the consequences of not having the treatment. If the client is a minor or lacks the capacity to make a decision, consent must be obtained from the client’s agent. A practitioner must obtain written consent prior to the provision of nitrous oxide/oxygen conscious sedation.

**May/could:** Freedom or liberty to follow a reasonable alternative.

**Minor:** In Alberta, a minor is defined as any person under the age of 18 years. *Note:* A mature minor is a person under 18 who is able to consent to his or her own medical treatment, to understand the nature and consequences of the treatment, and to decide who has access to his or her information.

**Natural Health Products:** (NHPs) are defined in the Health Canada's Natural Health Products Regulations as vitamins and minerals, herbal remedies, homeopathic medicines, traditional medicines such as Traditional Chinese Medicines, probiotics, and other products like amino acids and essential fatty acids. Under the new Regulations, the product must be safe for consideration as an over-the-counter (OTC) product. Natural Health Products are available for self care and self selection, and do not require a prescription to be sold. Products requiring a prescription will continue to be regulated under the Food and Drug Regulations.

**Monitor:** To observe and evaluate a function of the body closely and constantly.

**Must/shall:** Indicates an imperative need and/or duty; an essential or indispensable item; mandatory.

**Prescribe:** A verbal or written direction or order to provide the person therein named a stated amount of drug specified in the direction. Prescribing includes the choice of drug, dosage form and drug regimen (drug strength, dosing frequency and duration).

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

**Time-oriented anaesthesia record:** Documentation at appropriate intervals of drugs, dose and physiological data obtained during client monitoring.
**Titration:** The administration of small incremental doses of a drug until a desired clinical effect is observed.

**LEVELS OF KNOWLEDGE**

**Familiarity:** A simple knowledge for the purpose of orientation and recognition of general principles.

**Understanding:** Adequate knowledge with the ability to apply.

**In-depth:** A thorough knowledge of concepts and theories for the purpose of critical analysis and the synthesis of more complete understanding; the highest level of knowledge.

**LEVELS OF SKILL**

**Exposed:** The level of skill attained by observation or participation in a particular activity.

**Competent:** Displaying special skill or knowledge derived from training and experience.

**Proficient:** Level of skill attained when a particular activity is accomplished with repeated quality and a more efficient utilization of time; highest level of skill.

**ROUTES OF ADMINISTRATION**

**Enteral:** Any technique of administration in which the agent is absorbed through the gastrointestinal (GI) tract or oral mucosa (e.g., oral, rectal, sublingual).

**Inhalation:** A technique of administration in which a gaseous or volatile agent is introduced into the pulmonary tree and the primary effect is due to absorption through the pulmonary bed.

**Parenteral:** A technique of administration in which the drug bypasses the GI tract (i.e., intramuscular (IM), intravenous (IV), intranasal (IN), subcutaneous (SC)).

**Transdermal/transmucosal:** A technique of administration in which the drug is administered by patch or iontophoresis.

**METHODS OF ANXIETY AND PAIN CONTROL**

**Analgesia:** The diminution or elimination of pain in the conscious patient.

**Anxiolysis (minimal sedation):** The diminution or elimination of anxiety. A drug induced state during which clients respond to verbal commands. Although cognitive function and coordination may be impaired, ventilatory and cardiovascular functions are unaffected. In terms of these guidelines, pre-medication of the client for anxiolysis, is not considered conscious sedation.

**Conscious Sedation (Moderation sedation/analgesia):** Conscious sedation is a minimally depressed level of consciousness that retains the client’s ability to independently and continuously
maintain an airway and respond appropriately to physical stimulation and verbal command. It is produced by a pharmacologic or non-pharmacologic method or a combination thereof. In dental hygiene, it is used to reinforce positive suggestion and reassurance in a way which allows dental hygiene treatment to be performed with minimal physiological and psychological stress, and enhanced physical comfort. The technique must carry a margin of safety wide enough to render loss of consciousness highly unlikely.

**Combination inhalation-ental conscious sedation (combined conscious sedation):**
Conscious sedation using inhalation and enteral agents except when the only intent is anxiolysis. Nitrous oxide/oxygen when used in combination with appropriate sedation agents may produce anxiolysis, conscious sedation, or deep sedation/general anesthesia. Registered dental hygienists are not authorized to prescribe enteral sedation. Enteral sedation can only be prescribed by a health care practitioner who has this prescriptive authority through their profession’s regulation.

**Local anaesthesia:** the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug.

**The following terms are included in this document for information. Registered dental hygienists are not authorized to perform these restricted activities.**

**Deep sedation/analgesia:** an induced state of depressed consciousness accompanied by partial loss of protective reflexes, including the inability to continually maintain an airway independently and/or to respond purposefully to physical stimulation or verbal command, and is produced by a pharmacological or non-pharmacological method or combination thereof.

**General anaesthesia:** an induced state of unconsciousness accompanied by partial or complete loss of protective reflexes, including the inability to continually maintain an airway independently and respond purposefully to physical stimulation or verbal command, and is produced by a pharmacological or non-pharmacological method or combination thereof.
Practice Guidelines for the Utilization of Nitrous Oxide/Oxygen Conscious Sedation

The following guidelines are the minimum standards for the utilization of nitrous oxide/oxygen conscious sedation by registered dental hygienists.

General Guidelines

The registered dental hygienist shall:

1. Successfully complete a CRDHA approved nitrous oxide/oxygen conscious sedation educational program. (Refer to Appendix A)
2. Provide nitrous oxide/oxygen conscious sedation in a facility that is suitably staffed and equipped for this modality as prescribed in these guidelines. (Refer to Section on Facilities and Equipment Guidelines and Appendices G and H)
3. Follow current accepted guidelines to control nitrous oxide exposure. (Refer to Appendix B)
4. Keep an adequate, clearly recorded health history, including present and past illnesses, hospital admissions, current medications and doses, allergies (in particular to medications), and a functional inquiry. This must form a permanent part of each client’s record.
5. Determine the client’s Physical Status Classification in accordance with the American Society of Anesthesiologists (ASA) Patient Classification System, (Refer to Appendix C), as well as careful evaluation of any other factors which may affect the client’s suitability for nitrous oxide/oxygen conscious sedation.
6. Obtain written informed consent from the client or agent prior to initiating the procedure. If the client is a minor or lacks the capacity to make a decision, consent must be obtained from the client’s agent.
7. Not exceed that level of sedation for which they are qualified.
8. Only administer nitrous oxide/oxygen conscious sedation for the purposes of providing combination inhalation-ental nitrous oxide/oxygen conscious sedation if an appropriately trained physician or dentist is prescribing the enteral (oral) sedation agent. The prescribing physician or dentist must be on-site and immediately available.
9. Halt the provision of dental hygiene services should the administration of nitrous oxide/oxygen sedation produce depression beyond that of conscious sedation. Appropriate support procedures must be administered until the level of depression is no longer beyond that of conscious sedation, or until additional emergency assistance is available.
10. Ensure that recovery and discharge are appropriately monitored.
   10.1 All clients must be specifically assessed for adequate recovery as described in the section on Postoperative Monitoring.
   10.2 Discharge of clients will occur only under the conditions noted in Postoperative Monitoring.

11. In the event of a critical incident or an adverse outcome of any kind to the client or personnel, a written incident report must be completed and submitted to the CRDHA forthwith. Incident reports must include the following:
   11.1 Name, age and sex of the person involved
   11.2 Name of witness(es) to the incident
   11.3 Date and name of procedure
   11.4 Nature of the incident and treatment rendered
   11.5 Analysis of reason(s) for the incident
   11.6 Outcome

12. Remain current in this modality.

**Procedural Guidelines for the Administration of Nitrous Oxide/Oxygen Conscious Sedation**

The registered dental hygienist shall:

1. Perform a suitable preoperative health evaluation of the client. (Refer to pg. 13 Documentation - Prior to Treatment for further details)

2. Ensure the following preoperative procedures are completed:
   2.1 The client and/or agent must be advised regarding the procedure and informed consent must be obtained.
   2.2 Adequacy of oxygen supply must be determined.
   2.3 Baseline vital signs (blood pressure, pulse rate, oxygen saturation, and ventilation) should be determined, unless the client’s behaviour prohibits such delineation.
   2.4 Appropriate instructions for specific medication(s), inclusive of dietary instructions, should be given to the client or agent.

3. Ensure the client receives appropriate operative monitoring. (Refer to pg. 11 Monitoring Procedures – Operative Monitoring)

4. Ensure that at least one additional personnel is immediately available in the facility while administering nitrous oxide/oxygen conscious sedation.
5. Maintain an appropriate time-oriented anesthetic record, including documentation of individual(s) present during nitrous oxide/oxygen conscious sedation. (Refer to the section on Documentation pgs. 13 and 14)

6. Follow appropriate recovery and discharge procedures. (Refer to pgs. 11 and 12 Monitoring Procedures - Postoperative Monitoring and Discharge in these guidelines for further details)

   6.1 Operating and recovery area must have immediately available oxygen and suction equipment.

   6.2 Until vital signs are stable and the client is appropriately responsive for discharge from the facility, the client must have monitoring.

   6.3 An explanation of postoperative instructions must be provided to the client or agent at the time of discharge.

   6.4 Prior to leaving the facility, it must be determined that the client has met discharge criteria.

   6.5 If needed, clients must be discharged to the care of a responsible adult/agent when they are oriented, ambulatory, with stable vital signs, and showing signs of increasing alertness.

7. Have available the proper facilities, personnel, and equipment to manage any reasonably foreseeable emergency situation which may be experienced by the client.

   7.1 Back-up emergency services should be identified with protocol outlining necessary procedures for their immediate employment.

   7.2 All staff members must be prepared to recognize and treat adverse responses utilizing appropriate emergency equipment and drugs when necessary.

   7.3 All clinical staff must have the training and ability to perform basic cardiac life support (BCLS) techniques (CPR at the level required by CRDHA Council for annual renewal of a practice permit, is sufficient).

   7.4 Protocols for emergency procedures should be established and reviewed on a consistent basis.

   7.5 It must be documented that all emergency equipment and drugs are checked and maintained on a regularly scheduled basis.

   7.6 For non-hospital facilities, an emergency-assist system should be identified for ready access to emergency medical services. The anaesthesia provider is responsible for the anaesthetic management, the adequacy of the facility, and the diagnosis and treatment of emergencies associated with the sedation provided until the emergency medical services arrives to take over the management and transportation of the emergency to a medical facility.
Facilities and Equipment Guidelines

Facilities

The registered dental hygienist who utilizes nitrous oxide/oxygen conscious sedation must follow accepted infection control guidelines and have available the proper facilities, personnel, and equipment to manage any reasonably foreseeable emergency situation which may be experienced by the client.

Registration of Facilities

Under the Health Professions Act, dental hygienists can provide their services in a wide variety of settings. Settings and practice models include independent dental hygiene practice, mobile practice, and practice in association with another person or another regulated health professional.

Owning and operating a dental hygiene practice may include ownership of nitrous oxide/oxygen conscious sedation equipment. All dental hygiene facilities must be registered with the CRDHA prior to initiating use of the nitrous oxide/oxygen conscious sedation equipment. Refer to Appendix H for the registration application form.

Equipment

1. Gas delivery systems used for the administration of nitrous oxide and oxygen must:
   1.1 Have a fail-safe mechanism such that it will not deliver an oxygen concentration of less than 30% in the delivered gas mixture;
   1.2 Have pipeline inlet fittings, or pin-indexing, that do not permit interchange of connections between oxygen and nitrous oxide;
   1.3 Be checked regularly for functional integrity, must function reliably, accurately and receive appropriate care and maintenance according to manufacturer’s instructions. A written record of this service must be kept;
   1.4 Be equipped with a common gas outlet compatible with 15 mm male and 22 mm female conical connectors;
   1.5 Must be equipped with connectors, tubing and reservoir bag which allow use of a full face mask for resuscitative ventilation with 100% oxygen; and
   1.6 Be equipped with a scavenging system installed per manufacturer’s specifications.

2. There must be a readily available reserve supply of oxygen for immediate use. This should:
   2.1 Be portable, an “E” size cylinder as a minimum;
   2.2 Have an appropriate regulator, flowmeter and connectors as described above in 1.4 and 1.5;
   2.3 Be checked prior to use with each client to determine adequate oxygen supply.
3. A pulse oximeter should be used to monitor oxygen saturation.
4. A stethoscope and a blood pressure cuff or an automatic blood pressure and pulse rate monitor should be used to continually monitor blood pressure and pulse rate.
5. An emergency cart or kit must be immediately available and shall include the necessary drugs and equipment to assist in the resuscitation of a non-breathing and unconscious client and provide continuous support until the emergency medical services arrives.
6. All related equipment must meet published CSA Standards for Equipment. (Refer to Appendix G).

**Personnel**

**Education of Personnel**
1. All personnel must have the education required for them to provide their assigned duties competently and safely.
2. All personnel should be adequately trained in emergency management as detailed in these guidelines.

**Number of Personnel Required**
1. It is highly recommended that the minimum personnel in the operatory should be two (2) e.g., the dental hygienist and a chairside dental assistant. If the dental hygienist is operating alone, the equipment used must be sufficient to allow the level of monitoring required for this procedure. As noted in Section 4 of *Procedural Guidelines for the Administration of Nitrous Oxide/Oxygen Conscious Sedation* (pg 8), at least one additional personnel must be immediately available in the facility while administering nitrous oxide/oxygen conscious sedation.
2. It is recommended that a dental hygienist who is administering nitrous oxide/oxygen conscious sedation to a client who is a member of the opposite sex has a second staff member present in the operatory. When treating a client who is a member of the opposite sex, male dental hygienists MUST have a second person in the operatory during the provision of nitrous oxide/oxygen conscious sedation.
3. In the event of special circumstances (e.g. an emergency in another operatory), a modification in the number of personnel present may be made according to the best judgement of the practitioner responsible for the client under nitrous oxide/oxygen conscious sedation. However, at no time should the monitoring of the client be interrupted.
Monitoring Procedures

The most important technique of monitoring during any conscious sedation, including nitrous oxide/oxygen conscious sedation remains direct communication between the client and the registered dental hygienist. The ability of the client to respond appropriately to command is an integral part of the definition of consciousness. Lack of an appropriate response calls for immediate action to determine (and correct) the cause. Monitoring of the respiratory and cardiovascular systems, although important, is considered secondary to central nervous system (CNS) monitoring during nitrous oxide/oxygen conscious sedation. Refer to Appendix E for a sample of recordkeeping documents and recommended monitoring time intervals.

Operative Monitoring
1. An appropriately trained individual shall continually monitor (direct clinical observation) the client.
   1.1 The best method of monitoring the physical status of a client is continuous client contact. Verbal contact should be continuously maintained, although physical, not verbal, responses from the client should be encouraged.
   1.2 Colour of mucosa, skin, or blood must be continually evaluated. The client’s colour; i.e. nailbeds, mucosa, etc., should be visually monitored continuously. If a sterility barrier, which covers the client, is used, a hand or foot should be kept exposed.

2. It is strongly recommended that clinical observation be supplemented with the additional means of monitoring noted below:
   2.1 Oxygenation: saturation should be evaluated continually by pulse oximetry.
   2.2 Respiration rate: monitoring of the respiration rate by a trained individual (observation of chest excursions and listening for breath sounds), should occur in the intervals recommended in Appendix E.
   2.3 Circulation: blood pressure and heart rate (pulse) should be continually monitored through the use of a stethoscope and a blood pressure cuff or an automated blood pressure and pulse rate monitor.
   2.4 If any other pharmacologic agent is used in addition to nitrous oxide/oxygen conscious sedation and a local anaesthetic, monitoring guidelines for the appropriate level of sedation must be followed.

3. An appropriate time-oriented anesthesia record must be maintained.
4. The client’s head position should be checked frequently to ensure a patent airway.
5. At no time shall a sedated person be left unobserved.

Postoperative Monitoring and Discharge
1. When the treatment procedures have been completed and the client is being readied for discharge, vital signs should be recorded.
2. The only situation in which a registered dental hygienist may discharge a client unaccompanied is when the client is fully recovered and nitrous oxide/oxygen conscious sedation alone has been used.
Postoperative Monitoring and Discharge (cont’d)

2.1 It is important to remember that not all clients recover following nitrous oxide/oxygen conscious sedation to the extent that they may be discharged without an escort.

2.2 All clients must be specifically assessed for fitness for discharge using the criteria in Section 3 below.

2.3 If needed, clients must be discharged to the care of a responsible adult/agent when they are oriented (i.e. to time, place and person, relative to the pre-anaesthetic condition) ambulatory, with stable vital signs, and showing signs of increasing alertness.

3. The registered dental hygienist must assess the client’s responsiveness and shall discharge the client only when the following discharge criteria are met, providing the client met these criteria preoperatively:

3.1 vital signs are stable
3.2 client is alert
3.3 client can talk
3.4 client can sit up unaided
3.5 client can ambulate with minimal assistance
3.6 client is oriented to time, place and person - relative to his/her pre anaesthetic condition
3.7 client has returned to his/her preoperative vital sign status
**Documentation**

**Prior to Treatment**

1. The registered dental hygienist must document each nitrous oxide/oxygen conscious sedation procedure in the client’s chart. Documentation shall include:

   1.1 A suitable preoperative health evaluation. Prior to the administration of nitrous oxide/oxygen conscious sedation, a current health evaluation must be documented. The health evaluation should include, but is not limited to:
      i. preoperative physical evaluation (Refer to Appendix D)
      ii. client’s ASA classification of physical status (Refer to Appendix C)
      iii. current health history and drug profile
      iv. possible medical consultation with primary care physician or consulting medical specialist regarding risk or special monitoring of individuals who may not be medically stable or who have significant disability that places the client in the ASA III category.

   1.2 Name and contact information for the client’s physician.

   1.3 Name and contact information for the responsible adult/agent to notify in case of emergency.

   1.4 A notation of the explicit verbal instructions and/or a copy of the written preoperative instructions distributed to the client or agent.

   1.5 Specific dietary restrictions should be delineated based on the client’s determined physical status.

   1.6 A notation describing the content of the medication or a copy of the prescription must be placed in the client’s chart, along with a description of the instructions given to the client, if enteral (oral) sedation has been prescribed by the client’s physician or dentist.

**During Treatment**

1. Documentation should include:

   1.1 Heart rate (pulse), blood and tissue oxygenation, blood pressure, and adequacy of respiration. Recommended documentation intervals are no less than 15 minutes.

   1.2 Length of the procedure and sedation notes must be included.

   1.3 Medication given:
      i. Documentation should list the route, site and time of administration together with the type of drugs and dosages.
      ii. The sedation record must document individuals present during the administration of the enteral and/or nitrous oxide/oxygen conscious sedation.
After Treatment

1. Documentation should include:
   1.1 An assessment of the client’s stable vital signs and alertness prior to discharge
   1.2 The time of discharge
   1.3 Name of the agent to whom the client was discharged
   1.4 The written postoperative instructions distributed to the client or agent
   1.5 A notation of any complications, critical incidents or adverse outcomes
   1.6 In the event of a critical incident or an adverse outcome of any kind to the client or personnel, a written incident report must be completed and submitted to the CRDHA. Incident reports must include the following:
      1.6.1 Name, age and sex of the person involved
      1.6.2 Name of witness(es) to the incident
      1.6.3 Date and name of procedure
      1.6.4 Nature of the incident and treatment rendered
      1.6.5 Analysis of reason(s) for the incident
      1.6.6 Outcome
   1.7 Length of the nitrous oxide/oxygen conscious sedation procedure
   1.8 Length of the dental hygiene procedure

Refer to Appendix E for a sample of recordkeeping documents and recommended monitoring time intervals.
Appendix A

Policy Regarding Approval of Nitrous Oxide/Oxygen Conscious Sedation Courses

An educational program designed to produce competency in the utilization of nitrous oxide/oxygen conscious sedation will be considered a CRDHA Council approved program if it meets the following criteria:

1. Contains a minimum of:
   1.1 4 hours of didactic instruction and
   1.2 3 hours on-site clinical experience with clients

2. Course content must include:
   2.1 Nitrous oxide and oxygen conscious sedation medical emergencies and other adverse events (including prevention, recognition and management of adverse events)
   2.2 Indications and contraindications for use
   2.3 Client evaluation and selection
   2.4 Pharmacology of nitrous oxide
   2.5 Description of the function of the basic components of the inhalation sedation equipment
   2.6 Nitrous oxide and oxygen conscious sedation techniques (includes the signs of adequate client sedation, signs of client distress, and proper client monitoring)

3. Courses must be delivered by:
   3.1 The University of Alberta Faculty of Medicine and Dentistry’s Dental, Dental Hygiene or dental continuing education programs, or
   3.2 Other accredited faculties of dentistry and/or dental hygiene undergraduate, postgraduate or continuing education programs, or
   3.3 Other continuing education programs which the Registrar or Registration Committee deem substantially equivalent to a faculty of dentistry sponsored program and are:
      i. organized and taught by medical or oral health practitioners certified to administer nitrous oxide and oxygen conscious sedation as it applies to the provision of oral health services, and
      ii. held in a properly equipped dental environment, which will permit the candidates to utilize the techniques being taught on clients during dental hygiene treatment.

4. Programs must issue evidence of successful completion of the course.
# Appendix B

## Recommendations for Controlling Nitrous Oxide Exposure in the Dental Office

### Equipment
- properly installed nitrous oxide delivery system
- appropriate scavenging equipment with a readily visible and accurate flow meter
- vacuum pump with capacity up to 45 liters of air per minute per work station
- variety of mask sizes to ensure proper fit

### Ventilation
- vacuum exhaust and ventilation exhaust vented outside
- outside venting not in close proximity to fresh air vents
- good room air mixing for general ventilation

### Inspections
- with each use and when gas cylinder is changed, pressure connections tested for leaks using a soap solution or a portable infrared spectrophotometer
- daily, prior to first use, inspected for worn parts, cracks, holes or tears, and replaced as necessary
- appropriate flow rates (up to 45 liters/min or per manufacturer’s recommendations) verified

### Clients

#### Before Administration
- use properly sized masks to ensure a good, comfortable fit
- check for over or under-inflation of reservoir (breathing) bag while the patient is breathing oxygen (before nitrous oxide administration)

#### During Administration
- minimize talking and mouth breathing by patient while mask is in place
- reservoir bag periodically inspected for changes in tidal volume
- vacuum flow rate verified

#### After Administration
- 100% oxygen delivered to patient for five minutes before removing mask to purge patient and system of residual nitrous oxide
- system oxygen flush should not be used

### Dental Personnel
- periodic (i.e. semiannual) sampling of dental personnel, especially chair-side personnel exposed to nitrous oxide (e.g., with a diffusive sampler, such as a dosimeter or infrared spectrophotometer)

*Source: ADA Council on Scientific Affairs and the ADA Council on Dental Practice*
APPENDIX C:
ASA PHYSICAL STATUS CLASSIFICATION SYSTEM

The American Society of Anesthesiologists (ASA) developed a method of classifying clients according to medical risk. You can use this classification system to identify the physical status of a client prior to initiating dental hygiene care. As you complete an assessment of the client’s health and physical status and develop a care plan, this system is a tool that helps to increase client safety and comfort. This tool will help you determine whether or not nitrous oxide/oxygen conscious sedation is the best pain management option for a client.

The ASA system is quite simple to use when a client has an isolated health problem. However, many clients have several significant diseases. In these cases, you must make a professional judgment regarding the appropriate ASA category.

If you are unable to determine the clinical significance of one or more of the diseases, consult with the client’s physician, specialists, or with other medical or dental colleagues. Remember that the ultimate decision of whether to provide or postpone dental hygiene care is made by you, the dental hygienist. Professional responsibility and liability also rests with you, as the health professional that did or did not provide care to the client.

All clients must be dealt with on an individual basis, but clients who are ASA I or II are usually candidates for conscious sedation. Clients who are ASA III require special considerations, which often includes provision of dental hygiene services in a hospital setting. Clients who are ASA IV are NOT candidates for in-office conscious sedation.

The ASA Anesthesiologists classifications are summarized in this appendix, along with details to help you determine how to categorize a client.

Notice the icons beside each classification.

- Stop — do not treat.
- Proceed with caution — obtain the necessary medical clearance before providing care.
- Go — provide dental hygiene care.
ASA I: NORMAL HEALTHY CLIENTS

These clients are able to tolerate mild physical exertion and psychological stresses. They do not possess any organic, physiologic, biochemical, or psychiatric disturbances. These clients should be able to tolerate the physical and psychological stresses associated with your dental hygiene care plan with no added risk of serious complications.

Inhalation sedation should pose no risk to these individuals.

<table>
<thead>
<tr>
<th>Determining Factors</th>
<th>A review of this client’s health history would reveal that all systems (such as heart, lungs, and kidney) are functioning within normal limits (WNL). ASA I clients are able to perform normal activities without distress: they are able to walk up a flight of stairs or walk two level city blocks without undue fatigue, shortness of breath, or chest pain.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of ASA I Clients</td>
<td>Healthy clients with little or no anxiety.</td>
</tr>
<tr>
<td>Therapy Modifications</td>
<td>Therapy modifications are usually not warranted for this classification.</td>
</tr>
</tbody>
</table>
ASA II: CLIENT WITH MILD [TO MODERATE] SYSTEMIC DISEASE

These individuals, upon mild physical exertion and/or psychological stress, are less tolerant than ASA I clients. Fatigue and/or distress are factors that limit function in these individuals.

Inhalation sedation usually poses no risk to these clients, but clients should be carefully considered on a case-by-case basis.

<table>
<thead>
<tr>
<th>Determining Factors</th>
<th>ASA II clients are able to complete normal activities, but then must rest because of distress. These clients can walk up a flight of stairs or walk two level city blocks, but must rest after completing this walk (due to chest pain, undue fatigue, or shortness of breath).</th>
</tr>
</thead>
</table>
| Types of ASA II Clients | • Clients with a drug allergy or with multiple allergies to foods, metals, etc.  
• Clients with controlled and monitored health conditions, including:  
  • non-insulin dependent diabetes (NIDDM or type 2)  
  • adults with blood pressures between 140–159 mmHg or 90–94 mmHg  
  • well-controlled asthma, epilepsy (no seizures in past year), and thyroid conditions  
• Clients who are healthy but extremely anxious about receiving dental or dental hygiene care.  
• Clients who are pregnant and healthy.  
• Clients aged 65 or older who are healthy.  
• Smokers. |
| Therapy Modifications | Elective dental hygiene care is acceptable although consideration must be given to possible therapy modifications. Necessary modifications may include antibiotic premedication, stress reduction techniques, and consultation with the client’s physician, pharmacist, or other health care provider. |
ASA III: CLIENT WITH SEVERE SYSTEMIC DISEASE

These clients have a severe systemic disease that limits their activities, but does not incapacitate them. These clients cannot tolerate exertion and stress.

These clients present a greater risk for treatment; however, using nitrous oxide/oxygen conscious sedation does lessen anxiety and provide oxygen enrichment to the body systems.

Determining Factors

ASA III clients are able to complete normal activities, but then must rest because of distress. These clients can walk up a flight of stairs or walk two level city blocks, but must stop to rest before completing this walk. These clients do not display signs or symptoms of distress while at rest; however, in stressful situations (including your dental hygiene operatory), signs and symptoms develop.

Types of ASA III Clients

- Clients with well-controlled insulin dependent diabetes (IDDM or type 1).
- Clients with a history of a myocardial infarction (MI) or cerebrovascular accident (CVA) that occurred more than 6 months ago, but with no residual complications (i.e., no lasting negative effects after recovery).
- Adults with blood pressures between 160–199 mmHg or 95–114 mmHg.
- Clients with asthma that is not well controlled or stress induced, with a history of hospitalization because of “status asthmaticus.”
- Clients with epilepsy that is not well controlled (i.e., several seizures in the past year).
- Clients with symptomatic thyroid diseases.
- Clients with stable angina.
- Clients with COPD (Chronic Obstructive Pulmonary Disease, including emphysema and chronic bronchitis).

Therapy Modifications

Elective dental hygiene care is still appropriate. However, the need for stress-reduction techniques and other treatment modifications is increased. Medical consultation is recommended for these clients, particularly those with unstable conditions.
ASA IV: CLIENT WITH SEVERE SYSTEMIC DISEASE THAT IS A CONSTANT THREAT TO LIFE

Seek medical consultation or referral. These clients are categorized as high risk for many situations; the potential for an acute emergency situation is great.

Nitrous oxide/oxygen conscious sedation is not usually indicated except in emergency situations.

### Determining Factors
ASA IV clients are unable to walk up a flight of stairs or walk two level city blocks. These clients display signs or symptoms of their health problems while at rest.

### Types of ASA IV Clients
- Clients with uncontrolled IDDM.
- Clients with myocardial infarction (MI) or cerebrovascular accident (CVA) history that occurred less than 6 months ago.
- Adults with blood pressures between 200+ mmHg or 155+ mmHg.
- Clients with unstable angina.
- Clients with severe Congestive Heart Failure (CHF) or COPD that leaves them confined to a wheelchair or requiring supplemental oxygen.

### Therapy Modifications
Elective care should be postponed until the client’s health condition improves to at least ASA III. (It is best to consult with the client’s physician prior to proceeding at that time.) These clients have a health problem that is of greater significance than elective dental hygiene care. Management of dental emergencies, such as infection and pain, should be done as conservatively as possible until the client’s condition improves.

In cases where the client requires immediate intervention by the dentist, such as an extraction, the dentist will determine the most appropriate facility to perform this procedure. It is likely that this type of emergency care would be provided in an acute care facility, such as a hospital, since the client would have a better chance of survival if an acute medical emergency occurs.
ASA V: MORIBUND CLIENT WHO IS NOT EXPECTED TO SURVIVE WITHOUT THE OPERATION

Clients with this classification are not expected to survive 24 hours with or without an operation.

**Determining Factors**
These clients are almost always a hospitalized client with an end-stage disease. The physical condition of the ASA V client is fragile at best.

**Types of ASA V Clients**
- Clients with end-stage cancer.
- Clients with end-stage renal, hepatic, heart, or lung disease.
- Clients with end-stage infectious disease (e.g., AIDS).

**Therapy Modifications**
Elective dental hygiene services would not be required at this stage. However, provision of palliative oral health care (in the form of relief of pain or infection) might be necessary for these individuals. Following careful consultation with any necessary health care providers, if a decision is made to provide any form of palliative care, ASA V clients should be monitored throughout the procedure.

ASA VI: DECLARED BRAIN-DEAD CLIENT WHOSE ORGANS ARE BEING REMOVED FOR DONOR PURPOSES

Dental hygiene services would not be required at this stage.

**(E) EMERGENCY OPERATION MODIFIER**

Any client who requires an emergency operation may have an E modifier beside their ASA classification (e.g., ASA Class IE).

Appendix D
Preoperative Physical Evaluation

1. A current basic physical examination, suitable for determining information that may be significant to nitrous oxide/oxygen conscious sedation, must be carried out for each client. At a minimum, nitrous oxide/oxygen conscious sedation requires the evaluation and recording of significant positive findings related to:
   • General appearance (note obvious abnormalities)
   • Head, neck and intra-oral examination (particularly pertaining to airway, such as range of motion, loose teeth, potential obstruction from large tongue, tonsils, etc.)
   • The taking and recording of vital signs

2. If a more in-depth physical examination is required, it must be performed by a physician or dentist who has received formal education in a post-graduate anesthesiology program or an oral and maxillofacial surgery program. This in-depth examination may include:
   • Auscultation (cardiac or pulmonary)
   • Examination of other physiologic systems
   • Other assessments

The core physical examination may include an order for and assessment of laboratory data if indicated.
Appendix E

Record-keeping and Monitoring Recommendations

The following is a sample clinical record for nitrous oxide/oxygen conscious sedation that may be used as an adjunct to the existing client’s chart. The use of this particular form is not mandatory, but any client record should include all the information set out below.

<table>
<thead>
<tr>
<th>Client Name: ___________________________</th>
<th>Age: __________________</th>
<th>Date: __________________</th>
</tr>
</thead>
</table>

**Base Line Vital Signs (Date of V.S: ___________)**

<table>
<thead>
<tr>
<th>BP:</th>
<th>Resp:</th>
</tr>
</thead>
</table>

ASA Classification: I II III IV V

<table>
<thead>
<tr>
<th>Pulse:</th>
<th>O₂ Sat:</th>
</tr>
</thead>
</table>

Medical consultation completed: □ Yes □ Not applicable

<table>
<thead>
<tr>
<th>Height:</th>
<th>Weight:</th>
</tr>
</thead>
</table>

**Dental hygiene procedure(s) to be performed:__________________________
___________________________________
___________________________________
___________________________________

**Medical History Reviewed:** □

**Written Informed Consent obtained:** □

**Responsible Adult (Agent):** ____________________

<table>
<thead>
<tr>
<th>Vital Signs Monitoring</th>
<th>Preoperative</th>
<th>Intraoperative</th>
<th>Post-operative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time/Stats</td>
<td>Time/Stats</td>
<td>Time/Stats</td>
</tr>
</tbody>
</table>

BP:

Pulse/Quality:

Respiration:

O₂ Saturation (SpO₂):

**Local Anaesthetic:** □ Yes □ No

If Yes: Administered by: ____________________

**Local Anaesthetic Administration:** (List time: amount and injection type(s))

<table>
<thead>
<tr>
<th>N₂O Start Time:</th>
<th>N₂O Finish Time:</th>
</tr>
</thead>
</table>

Procedure Start Time: Procedure Finish Time:

**Titrated % of N₂O:** Postoperative O₂: (in minutes)

**Discharge Criteria (relative to preoperative condition):** □ Time □ Place □ Person

Client was oriented to ▸

**Post–Op Instructions Given:** □ Yes □ No

**Time of Discharge:**

Discharged to Responsible Adult (Agent) □ Yes □ No

**Comments:**

Practitioner Signature: ________________________________
## Appendix E (Cont’d)

### RECOMMENDED MONITORING FOR ADULT CLIENTS

<table>
<thead>
<tr>
<th>Monitor</th>
<th>Local Anesthesia</th>
<th>Oral Sedation</th>
<th>Nitrous Oxide/Oxygen Conscious Sedation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pr</td>
<td>In</td>
<td>Po</td>
</tr>
<tr>
<td>Heart Rate</td>
<td>**</td>
<td>O</td>
<td>*</td>
</tr>
<tr>
<td><strong>q5min</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>**</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><strong>q5min</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiration</td>
<td>**</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Oximetry</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>Temperature</td>
<td>*</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

### RECOMMENDED MONITORING FOR PEDIATRIC CLIENTS

<table>
<thead>
<tr>
<th>Monitor</th>
<th>Local Anesthesia</th>
<th>Oral Sedation</th>
<th>Nitrous Oxide/Oxygen Conscious Sedation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pr</td>
<td>In</td>
<td>Po</td>
</tr>
<tr>
<td>Heart Rate</td>
<td>**</td>
<td>O</td>
<td>*</td>
</tr>
<tr>
<td><strong>Cont.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>**</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><strong>q5min</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiration</td>
<td>**</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Oximetry</td>
<td>V</td>
<td>V</td>
<td>PT</td>
</tr>
<tr>
<td>Temperature</td>
<td>*</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

### Key
- O  - Not essential
- *  - Optional
- ** - Recommended
- *** - Must
- V  - Visual
- PT - Pretracheal stethoscope
- Pr - Preoperative
- In - Intra-operative
- Po - Post-operative
- Cont. - Continuous
**Appendix F**

**CRDHA Nitrous Oxide/Oxygen Conscious Sedation Education Recognition Request Form**

Date ________________________________

Ms. Brenda Walker, Registrar  
CRDHA  
206, 8657 51 Ave NW  
Edmonton, AB T6E 6A8

Dear Registrar:

Re: Nitrous Oxide/Oxygen Conscious Sedation

Please be advised that I wish to register as a dental hygiene practitioner providing nitrous oxide/oxygen conscious sedation. My education consists of the following course(s) which meets the criteria set out in the CRDHA Policy Regarding Approval of Nitrous Oxide/Oxygen Conscious Sedation Courses:

<table>
<thead>
<tr>
<th>Course date(s)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Course title</td>
<td></td>
</tr>
<tr>
<td>Course provider and location</td>
<td></td>
</tr>
</tbody>
</table>

Please note - a notarized copy of evidence of successful completion or evidence provided directly from the course provider must be attached. (Detailed course information may be requested to determine that the course completed meets CRDHA Council Criteria)

<table>
<thead>
<tr>
<th>Evidence of completion</th>
<th></th>
</tr>
</thead>
</table>

Evidence of currency

Required if course was completed more than 36 months prior to application. Employer verification of currency of administration of nitrous oxide/oxygen conscious sedation, in the form of a letter, must be attached.

I confirm that my CPR certification at the level required by CRDHA Council is current. (CPR certificate must be issued within the past twelve (12) months)

I have read and understand the **CRDHA Guidelines for Prescribing and Administering Nitrous Oxide/Oxygen Conscious Sedation in Dental Hygiene Practice**.

Yours truly,

________________________  ____________________________  ____________________
Member Signature  
Member Name (Please print)  
CRDHA Registration No.
Appendix G

Published CSA Standards for Equipment

The Canadian Standards Association (CSA) is a not-for-profit membership-based association serving business, industry, government and consumers in Canada and the global marketplace. The CSA functions as a neutral third party that develops standards in many areas including the field of health care technology.

Health care standards are developed to enhance the safety and effective application of technology in health care for the benefit of consumers and health care staff.

The standards are living documents, continually revised to address changing requirements and emerging technologies. Each standard is reviewed at least every five years.

Copies of any applicable CSA Standards for related equipment for the provision of nitrous oxide/oxygen conscious sedation or further details about CSA or the training workshops can be obtained by contacting the CSA directly:

Canadian Standards Association

Head Office
5060 Spectrum Way
Mississauga, ON L4W 5N6

Toll free: 1-800-463-6727
Ph: (416) 747-4000 Fax: (416) 747-4149 website: www.csa.ca

Regional Office
1707 94 St NW
Edmonton, AB T6N 1E6

Toll free: 1-800-463-6727
Ph: (780) 490-2007 Fax: (780) 490-2059
Appendix H

Registration of Dental Hygiene Facilities

If you have arranged to purchase, acquire, or install nitrous oxide/oxygen conscious sedation equipment, please complete this form and return it to the College of Registered Dental Hygienists of Alberta (CRDHA). You will then be provided with further information about the registration of your facility and the equipment. Nitrous oxide/oxygen conscious sedation equipment must **not** be used until it is registered. CRDHA will contact you to arrange for a facility and equipment inspection.

*Note:* A separate form must be completed for each piece of nitrous oxide/oxygen conscious sedation equipment. Completion of this form does **not** constitute registration of the equipment.

### Facility Description

| Facility Name: |
| City: | Postal Code: |
| Telephone: | Fax: |
| Name of Contact Person: |

### Equipment Description

| Room Location in Facility: |
| Stationary | Mobile | Portable |
| Installed | In Storage |
| Manufacturer: |
| Model: | Serial No: |
| Manufacture Date (year/month): |

### Owner Information

| Owner Name: |
| Address: |
| City: | Postal Code |
| Telephone: | Fax: |
| Owner Signature: | Date: |
| Print Name: |

Return by mail to: CRDHA, Ste. 206, 8657 51 Ave. NW, Edmonton, AB T6E 6A8 or by Fax to: (780)440-0544
References


Alberta Dental Hygienists’ Association (2005, September). *ADHA Practice Guidelines for the Utilization of Nitrous Oxide/Oxygen Conscious Sedation in Dental Hygiene Practice.* Edmonton, AB: ADHA.


Guidelines
Regarding
Prescription and
Non-Prescription
Drugs in Dental
Hygiene Practice

Approved by CRDHA Council
December 2007
Revised June 2008
# Table of Contents

Introduction ......................................................................................................................... 1  
Key Elements of these Guidelines ...................................................................................... 2  
Definitions ........................................................................................................................... 3  
Professional Responsibilities .............................................................................................. 6  
Guidelines for Prescribing Schedule 1 Drugs ................................................................. 8  
Guidelines for Administering and Recommending Drugs ............................................... 10  
Guidelines for Selling Prescription and Non-Prescription Drugs .................................... 12  
Guidelines for Storage and Disposal of Drugs ................................................................. 14  
Appendix A: Drug Error Management Guidelines ......................................................... 15  
Appendix B: Issuing Accurate and Legal Prescriptions .................................................... 19  
Appendix C: Reducing Risk of Drug Errors ..................................................................... 22  
Appendix D: Faxing a Prescription .................................................................................... 29  
Appendix E: Canada Vigilance Program ......................................................................... 31  
Appendix F: Labelling Standards ...................................................................................... 32  
Appendix G: Client Health History .................................................................................. 34  
References ......................................................................................................................... 35  

Approved by CRDHA Council Nov. 2006

Revised by CRDHA Council June 2008

Edmonton, Alberta

Planned Review Date: Nov 2011

This guideline will be updated and new evidence evaluated every 5 years, at a minimum. If indicated by the presence of new strong evidence prior to this, the guideline will be reviewed at an earlier date.
Introduction

Registered dental hygienists in Alberta strive to provide clients with optimal dental hygiene services based on individual client need. Prescribing Schedule 1 drugs (prescription drugs) and administering, distributing and recommending both prescription and non-prescription drugs are essential components of dental hygiene practice key to achieving optimal oral health outcomes for clients receiving dental hygiene services. Therefore, the standards of practice and accompanying guidelines that surround these competencies are relevant to all registered dental hygienists, and not only to those registered dental hygienists who have been issued a prescriber’s identification (ID) number by the College of Registered Dental Hygienists of Alberta (CRDHA).

The following guidelines are intended as a decision-making aid to support the utilization of prescription and non-prescription drugs by registered dental hygienists in their practice. These guidelines are dynamic and are intended to reflect current best practices. Clinical practice guidelines are designed to assist the practitioner in decision making. They are designed to enhance, not replace, clinical judgment or expertise. In many instances, these guidelines reflect minimum standards. While variations may be warranted based on the needs of the individual client or practice, registered dental hygienists are cautioned that failure to follow these guidelines may constitute a breach of one or more Standards of Practice, which is “unprofessional conduct”. Dental hygienists must be familiar with the guidelines, be appropriately educated and regulate their practice accordingly.

To determine how a drug is scheduled, the National Association of Pharmacy Regulatory Authorities (NAPRA) uses a drug scheduling model with a "cascading principle". A drug is first assessed using the factors for Schedule 1. If the drug has sufficient Schedule 1 factors it remains in Schedule 1. If not, the drug is assessed against the Schedule 2 factors, and if not deemed to be Schedule 2, is subsequently assessed against the Schedule 3 factors. Should the drug not meet the factors for any schedule, it becomes "unscheduled".

These scheduling factors reflect an assessment of drug-use risk to the public and establish the level of professional control required to provide safe and effective drug use for clients. In most cases, Alberta’s drug schedules are consistent with NAPRA’s drug schedules. In cases where the provincial drug schedule differs from NAPRA’s, these exceptions are noted directly in the Scheduled Drugs Regulation. The updated drug schedules can be found on the Alberta College of Pharmacists (ACP) website www.pharmacists.ab.ca.

There are three schedules or four categories of drugs:

<table>
<thead>
<tr>
<th>Schedule 1 Drugs (Prescription Drugs)</th>
<th>Schedule 3 Drugs (Non-Prescription)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule 2 Drugs (Non-Prescription)</td>
<td>Unscheduled Drugs (Non-Prescription)</td>
</tr>
</tbody>
</table>

For more information about the provincial drug schedules and the cascading principles, refer to the documents “Understanding Alberta’s Drug Schedules” on the ACP website, the Scheduled Drugs Regulation on the Queen’s Printer website, and the webpage “National Drug Schedules” on the NAPRA website at www.napra.org.

It should be noted that all drugs which are federally scheduled in Part F of the Regulations to the Food and Drugs Act are included in Schedule 1. Because drug scheduling is based on factors of relative risk associated with taking drugs with or without the advice of a health care professional, the practice guidelines found in this document reflect this concept.
The Dental Hygienists Profession Regulation (the Regulation) identifies a limited number of Schedule 1 drugs that registered dental hygienists may prescribe. In order to issue prescriptions, a registered dental hygienist must hold a prescriber’s identification (ID) number.

To obtain a prescriber’s ID number, registered dental hygienists must meet the CRDHA’s educational and experiential requirements, including successful completion of the CRDHA’s pharmacy refresher course. Only once the CRDHA office has provided you with a prescriber’s identification (ID) number are you able to prescribe the Schedule 1 drugs listed in the Regulation during the provision of dental hygiene services.

**Key Elements of these Guidelines**

1. Meet legislated requirements both provincially and nationally.
2. Be consistent with professional standards and guidelines for the protection of the public.
3. Adhere to accepted standards of practice for prescribing drugs.
4. Adhere to accepted standards of practice for non-prescription drugs.
5. Utilize, as appropriate, prescription and non-prescription drugs to optimize the outcome of dental hygiene care within the scope of practice, practice setting, and competencies of the individual registered dental hygienist.
6. Collaborate with physicians, pharmacists, dentists, and other health care professionals as necessary to provide optimal drug therapy management in dental hygiene care.
7. Communicate with the client and/or agent in an appropriate level, providing sufficient information, to ensure that the client is able to make an informed decision regarding the safety and efficacy of the proposed drug therapy.
8. Acquire, store, sell, and dispose of drugs in accordance with local, provincial, and federal standards, legislation and guidelines.
10. Refer to appropriate health care providers when necessary.
12. Participate in a drug error management program. (Refer to Appendix A: *Drug Error Management Guidelines*)
13. Participate in the Canada Vigilance Program, Health Canada’s post-market surveillance program for reported adverse drug reactions. (Refer to Appendix E: *Canada Vigilance Program*)
Definitions

Administer: to supply a dose of a drug to a person for the purpose of immediate ingestion, application, inhalation, insertion, instillation, or injection.

Adverse Drug Reaction: An adverse drug reaction (ADR) is defined by Health Canada as a noxious and unintended response to a drug which occurs with use or testing for the diagnosis, treatment or prevention of a disease or the modification of an organic function. This includes any undesirable client effect suspected to be associated with drug use. ADRs as a result of prescription, non-prescription, biological (including blood products), complementary medicines (including herbals) and radiopharmaceutical drug products are monitored. Drug abuse, drug overdoses, drug interactions and unusual lack of therapeutic efficacy are also considered to be reportable as ADRs.

ADR reports are, for the most part, only suspected associations. A temporal or possible association is sufficient for a report to be made. Reporting an ADR does not imply a causal link. ADRs that should be reported include all suspected adverse drug reactions which are:
• unexpected, regardless of their severity i.e. not consistent with product information or labelling; or
• serious, whether expected or not; or
• reactions to recently marketed drugs (on the market for less than five years) regardless of their nature or severity.

Adverse Outcome: A harmful event for a client or personnel, where transfer to hospital with or without admission was necessary. In the event of a critical incident or adverse outcome of any kind, a written incident report must be completed and reported to the CRDHA forthwith. (Refer to pg. 17 for details on the incident report.)

Agent: A parent or guardian legally authorized to act on behalf of a client.

Client: may be an individual, family, group, institution, community or population accessing the professional services of a dental hygienist.

Compound: Schedule 7.1 (Health Services Restricted Activity) of the Government Organization Act (GOA) defines compound as “to mix together 2 or more ingredients of which at least one is a drug for the purposes of dispensing a drug or drugs, but does not include reconstituting a drug or drugs with only water.” There are some instances in dental hygiene practice where a member might engage in compounding. For example, the mixing of Benadryl liquid and Kaopectate for a client to use as a rinse for relief of pain for aphthous ulcers.

Critical Incident: An event creating a substantial risk of serious health or safety consequences. In the event of a critical incident or adverse outcome of any kind, a written incident report must be completed and reported to the CRDHA forthwith. (Refer to pg. 17 for details on the incident report.)

Drug: In the broadest sense, drug is defined as any chemical or biological substance, (other than food), synthetic or non-synthetic, that when taken into the body produces an effect or
alters a bodily function such as prevention of a disease, relief of symptoms, or curing a disease. In this broad definition, **drug** is often used interchangeably with **medication**. The Food and Drugs Act (Canada), as well as Alberta’s legislation, offer more narrow, legal definitions of the term “drug.” The Food and Drugs Act also distinguishes between “drugs” and “natural health products.” When you determine the “drug profile” for each client, “drug” is to be considered in this broad sense (see Drug Profile for further details).

Legal definitions of “drug” relevant for Alberta’s dental hygienists are found in Canada’s Food and Drugs Act and Alberta’s Pharmacy and Drug Act:

Canada’s Food and Drugs Act, supplies the following definition:
“drug” includes any substance or mixture of substances manufactured, sold or represented for use in
(a) the diagnosis, treatment, mitigation or prevention of a disease, disorder or abnormal physical state, or its symptoms, in human beings or animals,
(b) restoring, correcting or modifying organic functions in human beings or animals, or
(c) disinfection in premises in which food is manufactured, prepared or kept.

Alberta’s Pharmacy and Drug Act defines drug as a substance or a combination of substances referred to in section 31, 32, or 33 [of the Pharmacy and Drug Act] or defined as an emergency release drug of a special access drug and any combination of such a substance or substances with any other substance.

**Drug Profile:** The drug profile is part of the client’s comprehensive health history and is completed for each client prior to initiating dental hygiene care. The client’s drug profile, which is used to develop a care plan, aids the registered dental hygienist in determining possible contraindications and adverse effects, such as drug-drug and drug-food interactions. The drug profile includes:

- A comprehensive list of drugs (prescription and non-prescription) that the client is currently taking, or has taken, since the last update of the client’s health history. When determining non-prescription drugs, the drug profile must include any drugs listed in Schedules 2 and 3 of Alberta’s Drug Schedules, unscheduled drugs as well as alcohol, tobacco, and natural health products not included in the provincial drug schedules.
- Adverse drug reactions (e.g. known allergies or sensitivities)
- Client compliance
- The dental hygienist’s interpretation about how the client’s medications are affecting the client’s systemic health and the health of the oral cavity.

**Facsimile Transmissions:** means transmission of the exact visual image of a document by way of electronic equipment. A prescription transmitted by facsimile can be accepted for all classes of drugs.

**Health History:** A complete and thorough legal document that contains information about the client’s past and present medical and dental conditions, risk factors for disease, a drug profile, undiagnosed conditions and allergies or sensitivities. The health history should also include information about the client’s lifestyle; cultural practices related to health and disease, past and present emotional problems, and general state of mind. This written report is obtained from the health history questionnaire, a verbal interview, and direct client observation. (Refer to Appendix G: Client Health History for further details)

**Informed Consent:** The client has been provided with information about the proposed treatment, including material effects and costs, significant risks and side effects of the proposed treatment, alternative treatments and the consequences of not having the treatment. You must also answer
the client’s questions. If the client is a minor or lacks the capacity to make a decision, consent must be obtained from the client’s agent. A practitioner may wish to consider the additional legal protection of a written consent form.

**May/could:** Freedom or liberty to follow a reasonable alternative.

**Minor:** In Alberta, a minor is defined as any person under the age of 18 years. Note: A mature minor is a person under 18 who is able to consent to his or her own medical treatment, to understand the nature and consequences of the treatment, and to decide who has access to his or her information

**Must/shall:** Indicates an imperative need and/or duty; an essential or indispensable item; mandatory.

**Natural Health Products:** (NHP’s) are defined in the Health Canada’s Natural Health Product Regulations under the Food and Drugs Act as vitamins, minerals, herbal remedies, homeopathic medicines, traditional medicines such as Traditional Chinese Medicines, probiotics, and other products like amino acids and essential fatty acids. Under the new Regulations, the product must be safe for consideration as an over-the-counter (OTC) product. Natural Health Products are available for self care and self selection, and do not require a prescription to be sold. Products requiring a prescription will continue to be regulated under the Food and Drug Regulations.

**Non-prescription:** Drugs that can be obtained without a prescription. Non-prescription drugs include any drugs listed in Schedules 2 and 3 of Alberta’s Drug Schedules, unscheduled drugs as well as alcohol, tobacco, and natural health products not included in the provincial drug schedules. {See Guidelines for Selling Prescription and Non-Prescription Drugs – Non-Prescription Drugs (Schedules 2, 3 & Unscheduled) on pg 13 of this document.}

**Prescribe:** A verbal or written direction or order to provide the person therein named a stated amount of drug specified in the direction. Prescribing includes the choice of drug, dosage form and drug regimen (drug strength, dosing frequency and duration).

**Prescription:** A direction by a person who is authorized by an Act of the Legislature of Alberta or an Act of the Parliament of Canada to prescribe drugs, directing that a drug be dispensed to or for the patient named in the direction.

**Prescription Drugs: Schedule 1 drugs** require a prescription as a condition of sale. Drugs in this schedule include all the federally scheduled drugs, referred to in the Food and Drug Regulations (Canada) as Part I and II in Schedule F, and certain others which are specific to Alberta. Drugs designated as Schedule 1 in accordance with Section 34 of the Pharmacy and Drug Act (Alberta) are, therefore, subject to the same regulations as drugs listed in Part I and II in Schedule F in the Food and Drug Regulations (Canada).

**Recommend:** to suggest a course of action or drug therapy to a client based on professional expertise and assessed client need.

**Sell:** in Schedule 7.1 - Health Services Restricted Activities of the *Government Organization Act (GOA)*, sell includes:

- distribute, trade or barter for money or other valuable consideration,
- distributing and giving away without expectation or hope of compensation or reward,
- keeping for sale, and
- offering for sale.

**Should:** The recommended manner to obtain the standard; highly desirable.
Professional Responsibilities

The registered dental hygienist:

1. Must make a professional judgment regarding the client’s condition and recommend a product, other treatment, no treatment, or referral to an appropriate health care professional.

2. Must recall or locate current knowledge of drug therapies commonly accepted in dental hygiene practice, along with knowledge of the drug, including possible drug interactions or contraindications, its risks and benefits as to the expected treatment outcomes.

3. Shall enhance competency and assure quality of care through continuing education specific to prescription drugs and the practice of dental hygiene.

4. Is responsible for communicating with the client/agent.
   4.1. The level of the client’s/agent’s understanding shall be determined in order to facilitate effective communication.
   4.2. Direct dialogue with the client (or agent) shall include, but is not limited to:
      4.2.1. confirmation of the identity of the client
      4.2.2. determination of health history and drug profile
      4.2.3. confirmation of the identity of the drug(s) being administered, distributed, prescribed, and/or recommended
      4.2.4. rationale for particular drug therapy and expected benefits
      4.2.5. dosage regime and instructions required to achieve intended therapeutic outcomes
      4.2.6. common or serious potential adverse reactions (e.g., side effects, drug-drug interactions, or drug-food interactions)
      4.2.7. management of adverse reactions (e.g., increased tooth staining, altered taste sensation, allergic reactions)
      4.2.8. storage requirements (if applicable).
   4.3. If the drug is being released to a person acting as the client’s agent, the registered dental hygienist shall:
      4.3.1. provide the agent with the information, if the registered dental hygienist is satisfied that it is in the client’s best interest to do so.
      4.3.2. where possible, communicate verbally by telephone with the client.
      4.3.3. confirm that the person is authorized to act as an agent for the client.
4.4. Verbal counseling shall be supplemented with written information when appropriate.

5. must monitor the client’s response to drug therapy. Monitoring includes assessment of effectiveness, compliance and adverse reactions. Based on the monitored outcomes, the drug therapy may be continued, adjusted, or discontinued.

6. must provide documentation in the client’s chart that is in a clear, concise, and easy to read format that includes, but is not limited to:
   6.1. date of interaction
   6.2. current client health history and drug profile
   6.3. drugs prescribed for the purposes of providing dental hygiene services: drug name, dosage regime (strength, frequency and duration), and usage instructions
   6.4. non-prescription drugs recommended during the provision of dental hygiene services: drug name, dosage regime (strength, frequency and duration), and usage instructions
   6.5. drugs administered during the provision of dental hygiene services: drug name, drug strength, amount, route of administration, and post-operative instructions to client
   6.6. For Schedule 1 or Schedule 2 products that you “sell” to clients, you must also document the DIN number and a unique prescription or transaction number.
   6.7. rationale for particular drug therapy and recommendations
   6.8. client’s response to drug therapy including: effectiveness, compliance, and adverse reactions
   6.9. plan to follow up if appropriate
   6.10. registered dental hygienist’s initials

7. shall establish and/or participate in a drug error management program. (Refer to Appendix A: Drug Error Management Guidelines)

8. shall participate in Health Canada’s post-market surveillance program of adverse drug reactions, the Canada Vigilance Program. (Refer to Appendix E: Canada Vigilance Program)

9. shall promote a collaborative approach to drug therapy within the health care team. To achieve the best outcomes from drug therapy, the involved health care professionals and clients must work together cooperatively and in partnership. Working together effectively requires trust, respect, good communication and mutual recognition, as well as understanding of each other’s complementary roles. This shall include, but is not limited to the following:
   9.1. Communication amongst members of the client’s health care team in accordance with ethical standards and legislation to protect client privacy.
   9.2. Contribution to improvement of the quality of client care, particularly continuity of care.
   9.3. Recognition that health care professionals involved with the client have complementary and supporting responsibilities in providing optimal drug therapy.
Guidelines for Prescribing Schedule 1 Drugs

All dental hygienists must be familiar with the basic concepts of prescription writing to ensure the safe use of medications and to provide appropriate and necessary drug therapy during the provision of dental hygiene services. Dental hygienist prescribers have the added responsibility of ensuring that each prescription meets the necessary legislated requirements that surround the issuance of a prescription.

Registered dental hygienists must meet the qualifications for and hold a prescriber’s identification (ID) number in accordance with provincial regulations in order to prescribe Schedule 1 drugs. A prescriber’s ID number will be issued by the CRDHA to registered dental hygienists who meet the CRDHA’s educational and experiential requirements, including successful completion of the CRDHA’s pharmacy refresher course, and who submit an application for a prescriber’s ID number.

Prescribing procedures and activities carried out by registered dental hygienists are processes that are defined by the individual client needs, the competency and professional judgment of the registered dental hygienist, the information that is available to support informed decisions, the registered dental hygienist’s relationship with other members of the client’s health care team, and the code of ethics, standards of practice and guidelines established by the CRDHA. (Appendices B through D provide further information on issuance of prescriptions)

1. Registered dental hygienists in Alberta who hold a prescriber’s ID number:
   1.1. Are authorized to prescribe drugs to clients for whom prophylactic antibiotic coverage is recommended.
   1.2. Are authorized to prescribe drugs to treat oral conditions which they can identify and manage.
   1.3. May utilize non-pharmacological and pharmacological approaches to manage oral conditions.
   1.4. Shall not prescribe drugs for themselves.
   1.5. Shall only prescribe drugs for family members if they are clients of record and it is needed specifically for oral health treatment.
   1.6. Shall not prescribe medications for off-label use unless the drug is part of a research project to investigate use of the drug to treat a documented dental hygiene need. The research project must have received ethics approval from a duly constituted health research ethics board.
   1.7. Shall ensure that drug therapy is based on evidence-based clinical practice.
   1.8. Shall select drug therapy based on knowledge of pharmacotherapy and consideration of factors, including, but not limited to:
      1.8.1. expected action or therapeutic outcome
1.8.2. recommended dosage and dosage adjustment for specific clients
1.8.3. common or serious adverse effects
1.8.4. client’s health care objectives
1.8.5. client specific factors such as age, weight, gender, culture, medical conditions, concurrent medications, drug allergies
1.8.6. contraindications
1.8.7. drug interactions
1.8.8. dosage forms available
1.8.9. cost effectiveness

1.9. Shall utilize the client’s health history. (Refer to Appendix G: Client Health History).

1.10. Shall access, utilize, and contribute to the client’s complete drug profile.

1.11. Shall collaborate with physicians, pharmacists, dentists and other health care professionals as necessary to provide optimal drug therapy outcomes.

1.12. Shall discuss with the client (or agent) rationale for the selection of a particular drug, implications of using drug therapy, and expected outcomes and possible risks.

1.13. Shall prescribe a cost-effective drug therapy, whenever possible and appropriate.

2. Prescribing of drugs shall be consistent with professional, provincial, and federal legislation, standards and guidelines for the protection of the public. Including, but not limited to:

2.1. Prescriptions, (both written and verbal), shall be prepared accurately, clearly and completely and in accordance with legislation, standards and guidelines. (Refer to Appendix B: Issuing Accurate and Legal Prescriptions).

2.2. Issuance of faxed prescriptions shall be in accordance with provincial and federal legislation and these guidelines, ensuring that the following principles are maintained (Refer to Appendix D: Faxing a Prescription for further details):

2.2.1. security
2.2.2. client confidentiality
2.2.3. integrity of distribution
2.2.4. accuracy
2.2.5. client choice

2.3. Issuance of prescriptions for medications for professional office use shall be in accordance with provincial and federal guidelines. (Refer to Appendix B: Issuing Accurate and Legal Prescriptions).

2.4. Issuance of a stop order for any previous prescriptions ordered by the dental hygienist (or another dental hygienist) that need to be cancelled. (Refer to Appendix B: Issuing Accurate and Legal Prescriptions - Stop Orders).

2.5. Monitoring and documentation of prescribing decisions shall be in accordance with the legislation and the guidelines in this document.
Guidelines for Administering and Recommending Drugs

Administering and recommending drugs are essential components of dental hygiene practice for all registered dental hygienists in Alberta.

Procedures and activities related to administering and recommending drugs are processes that are defined by the individual client’s needs, the competency and professional judgment of the registered dental hygienist, the information that is available to support informed decisions, the registered dental hygienist’s relationship with other members of the client’s health care team, and the code of ethics, standards of practice and guidelines approved by the CRDHA.

Administration of drugs is not a restricted activity under Schedule 7.1 of the Government Organization Act (GOA). A dental hygienist does not have to be an authorized prescriber to administer drugs during the provision of dental hygiene services — administration of prescription and non-prescription drugs include chlorhexidine irrigation, administration of local anaesthetic, topical fluoride application and administration of a bronchodilator during a medical emergency.

There may be instances when a dental hygienist would recommend a prescription drug. Following are two examples:

**Example 1.** During the development of a client’s care plan, the dental hygienist non-prescriber may identify the need for prescription drugs, such as antibiotic premedication or chlorhexidine rinse. In this case, the dental hygienist collaborates with a prescriber (e.g., dentist, physician) to help the client obtain the necessary drug, providing the rationale and assessment data that has led the dental hygienist to this determination.

**Example 2.** During the development of a client’s care plan, a dental hygienist prescriber may determine that a drug that dental hygienists are not authorized to prescribe, such as systemic antifungals, may be the best course of action for the client. In this case, the dental hygienist collaborates with a prescriber who is authorized to prescribe the drug (e.g., dentist, physician) providing the rationale and assessment data that has led the dental hygienist to this determination.

As always, the final decision to prescribe any drug lies with the prescriber.

1. Registered dental hygienists in Alberta:
   1.1. Shall utilize the client’s health history (Refer to Appendix G: Client Health History)
   1.2. Shall recognize the need for prophylactic antibiotic coverage in clients for whom it is recommended.
   1.3. Shall recognize the need for drug therapy for the treatment of oral conditions which they can identify and manage.
   1.4. May administer and recommend prescription drugs to treat oral conditions which they can identify and manage.
1.5. May administer and recommend non-prescription drugs to treat oral conditions which they can identify and manage.

1.6. May utilize non-pharmacological and pharmacological approaches to manage oral conditions.

1.7. Shall ensure that drug therapy administered or recommended is based on commonly accepted dental hygiene practice.

1.8. Shall collaborate with physicians, pharmacists, dentists and other health care professionals as necessary to provide optimal drug therapy outcomes.

1.9. Shall discuss with the client (or agent) rationale for the selection of a particular drug, implications of using drug therapy, and expected risks and outcomes.

1.10. Shall monitor and document their administration of drugs in accordance with any applicable federal or provincial legislation and the guidelines in this document.
Guidelines for Selling Prescription and Non-Prescription Drugs

In the Government Organization Act Schedule 7.1 - Health Services Restricted Activities, the term “sell” includes:
• distribute, trade or barter for money or other valuable consideration,
• distributing and giving away without expectation or hope of compensation or reward,
• keeping for sale, and
• offering for sale.

PRESCRIPTION DRUGS (SCHEDULE 1)

When a pharmacy cannot be accessed by the client, or special circumstances exist, the drug (full prescription) may be given or sold to the client from stock held by the practitioner. In these instances, the registered dental hygienist shall:
1. Sell prescription drugs in accordance with local, provincial, and federal legislation and guidelines.
2. Verify any calculations used to determine the dosage regimen.
3. Ensure that a competent second person confirms the accuracy of the product being sold and documents that confirmation.
4. Not sell expired or recalled prescription drugs.
5. Not sell prescription drugs that will expire prior to the client completing the recommended course of therapy.
6. Consult with the pharmacist to ensure a complete drug profile is maintained.
7. Ensure that prescription drugs are in the most appropriate package to ensure stability.
8. Ensure that client and prescription information is recorded and filed systematically and accurately.
9. Retain prescription records in accordance with the applicable federal and provincial legislation, practice standards, and these guidelines.
   9.1. The required length of time for record retention can vary based on each individual client situation. This can be due to the environment in which you practice (e.g., private practice or a hospital) or who is reimbursing you for the provision of services (e.g., private insurance or Alberta Health Care). Unless legislation requires retention for a longer period of time, (e.g. the Health Information Act), prescription records must be retained for at least two years past the completion of therapy (including refills) or for 42 months (3 ½ years) whichever is greater.
10. Ensure that labelling of prescription drugs sold in-office is in accordance with applicable legislation and standards, including Health Canada’s Food and Drugs Act, the Standards and the Alberta College of Pharmacists’s (ACP’s) Labelling Standards for Prescription Drugs.
   • Health Canada’s labelling requirements for prescription drugs are found in the Regulations to the Food and Drugs Act and in the Guide for the Labelling of Drugs for Human Use.
   • ACP’s most up-to-date labelling standards can be found on their web-site.
11. Be responsible for handing the drug directly to the client or client’s agent.
NON-PRESCRIPTION DRUGS (SCHEDULES 2, 3 & UNSCHEDULED)

The registered dental hygienist shall:
1. Sell non-prescription drugs in accordance with local, provincial, and federal legislation and guidelines to aid in the achievement of their client’s oral health goals.
   1.1. **Schedule 2 Drugs:** The drugs listed in Schedule 2 do not require a prescription as a condition of sale. Schedule 2 drugs are less strictly regulated, but do require professional intervention with an appropriately qualified healthcare practitioner. These items must be sold from an area to which there is no public access and no opportunity for client self-selection.
   1.2. **Schedule 3 Drugs:** are suitable for client self-selection, but may pose risks for certain groups of people and should be sold where an appropriately qualified healthcare practitioner is available to provide advice when required.
   1.3. **Unscheduled Drugs:** can be sold without professional supervision. Labelling is believed sufficient to ensure that the client makes a safe and effective choice and uses the drug appropriately.
2. Ensure that client and non-prescription drug information is recorded and filed systematically and accurately.
4. Not sell non-prescription drugs that will expire prior to the client completing the recommended course of therapy.
5. Ensure that non-prescription products that are re-packaged and sold in-office to the client will be labelled in accordance with applicable legislation and the Alberta College of Pharmacists Labelling Standards. (Refer to Appendix F: Labelling Standards for further information)
6. Ensure that labelling on non-prescription products provided directly from the manufacturer are in accordance with labelling standards (Refer to Appendix F: Labelling Standards for further information)

**Remember:** The authority to perform the restricted activity “providing for sale or selling” does not mean that registered dental hygienists will now be able to sell drugs in the same manner as pharmacists. There is no intent for dental hygienists to establish store front sales centers for prescription or non-prescription drugs used in providing dental hygiene services. The authorization to provide for sale or sell is merely intended to provide flexibility to meet client needs where a pharmacy is not readily accessible or client compliance is an issue.
Guidelines for Storage and Disposal of Drugs

The registered dental hygienist shall:

1. Acquire, store and dispose of prescription and non-prescription drugs in accordance with local, provincial, and federal legislation and guidelines.
2. Be knowledgeable about proper storage and disposal of prescription and non-prescription drugs utilized for dental hygiene purposes.
3. Accept (or arrange for) the return of unused prescription medications, (prescribed by the registered dental hygienist) from the client for safe and proper disposal.
4. Remove unusable, outdated, mislabelled or deteriorated drugs and those subject to recall and store them in a separate area until they can be safely disposed.
Incorporating a drug error management program into your practice is an important risk reduction and error prevention strategy. The program assists in evaluating drug therapy services and provides an opportunity to institute positive changes that will minimize the likelihood of a recurrence of an error. In order to maximize client safety and minimize the risk of drug errors, all health care providers in your practice setting should participate in this program.

In keeping with the focus on interdisciplinary collaboration, it is recommended that dental hygienists participate in a drug error management program that closely reflects the expectations of the Alberta College of Pharmacists (ACP) and the College of Physicians and Surgeons of Alberta (CPSA). Consistency with processes used by Alberta’s physicians and pharmacists allows for better analysis and information sharing with other health care professionals. The following process and sample form have been adapted from ACP’s Practice Standards and Drug Error Management guidelines, which are posted on ACP’s website, www.pharmacists.ab.ca.

**PROCESS FOR MANAGING DRUG ERRORS**

Drug error management is a three-step process:

1. Implement procedures to prevent drug errors.
2. Employ corrective measures when an error has occurred.
3. Report incident to the appropriate agencies.

**Implement Procedures**

Prevention strategies or procedures to prevent and reduce drug errors are often low-cost and practical initiatives that are easy to implement. An example is separating look-alike drugs in the storage room or in the operatories. Other approaches, in particular those that may be used in regional health care facilities such as hospitals and continuing care centres, may require major operational changes throughout the organization as well as significant financial expenditure.

Policies and procedures, at a level appropriate to the practice environment, should address the corrective measures and how to report drug errors.

**Employ Corrective Measures**

Corrective measures include investigating, evaluating, and documenting drug errors. If a client experiences harm due to a drug error, full and complete disclosure must occur. The Health Quality Council of Alberta (HQCA) defines harm as “an unexpected or normally avoidable outcome that negatively affects the patient’s health and/or quality of life, which occurs or occurred in the course of health care treatment and is not due directly to the patient’s illness”.

**Investigating Drug Errors**

All drug errors should be investigated. The investigation process depends on the severity and extent of the drug error. Importantly, the investigation should occur in a timely manner to reduce the risk of a repeat incident. Part of this investigation process is having a mechanism in place to obtain feedback on the error, and if necessary, incorporate or evaluate any procedural changes.

All drug errors that occur in the practice setting should be conveyed to the owner (or designate) of the practice setting (e.g., dentist in private practice office or unit manager in a hospital setting). The client must be contacted immediately and told about the drug error as well as actions that need to be taken.
**Evaluating Drug Errors**

Two types of evaluation must occur. One evaluation occurs when a drug error is discovered and the other evaluation occurs after corrective action has been implemented.

1. Identify the necessary action to be taken as a result of the error. Use the results of the evaluation as an educational tool within the practice environment, with the ultimate goal of improving client safety and minimizing the risk of errors as it relates to drug therapy.

2. Determine whether the implemented action was successful in achieving the desired outcome. Drug error reports should be reviewed regularly (e.g., quarterly) with all health care providers to determine if the changes were successful in decreasing errors or if further interventions are required.

**Documenting Drug Errors**

Once verified, the error must be documented, including the factors that contributed to the drug error. Use the Drug Error Report form at the end of this appendix or a similar form.

The following is a list of documentation requirements:

- All known drug errors must be documented within 24 hours of the time of discovery.
- The health care provider responsible for discovering the drug error shall complete and sign a drug error report as soon as possible after the discovery.
- Reports should only contain known facts. Subjective comments should not be included in the report.
- This documentation must be in a format that can be easily audited and reviewed. It is recommended to keep the documentation for ten years.
- The Drug Error Report is used for all types of drug errors, including drug incidents and drug discrepancies (near misses). You may choose to store completed drug discrepancy reports separately from drug error/incident reports.

**Report Incidents**

Reporting requirements depend on the drug error severity and whether an adverse drug reaction occurred due to the drug error. Two types of reporting forms are used to report incidents: Drug Error Report and Adverse Drug Action Report. Use the reporting form required by each agency; for example, Health Canada (adverse drug reaction) and the Institute for Safe Medication Practices (ISMP) Canada (drug error) each have a customized Report. Review the information in the next table for reporting drug errors.

### Reporting Drug Errors

<table>
<thead>
<tr>
<th>Drug Severity</th>
<th>Drug Reaction Type</th>
<th>Report To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Incident or Adverse</td>
<td>Adverse reaction—all types excluding idiosyncratic</td>
<td>CRDHA*</td>
</tr>
<tr>
<td>Outcome</td>
<td></td>
<td>Health Canada</td>
</tr>
<tr>
<td></td>
<td>Idiosyncratic reaction</td>
<td>ISMP (optional)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health Canada</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drug Manufacturer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ISMP (optional)</td>
</tr>
</tbody>
</table>

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16
<table>
<thead>
<tr>
<th>Drug Severity</th>
<th>Drug Reaction Type</th>
<th>Report To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Incident or Adverse Outcome (cont’d)</td>
<td>None</td>
<td>CRDHA*</td>
</tr>
<tr>
<td>Non-Critical Incident</td>
<td>Adverse reaction-all types excluding idiosyncratic</td>
<td>Practice Setting†</td>
</tr>
<tr>
<td>Non-Critical Incident (cont’d)</td>
<td></td>
<td>Health Canada</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ISMP (optional)</td>
</tr>
<tr>
<td></td>
<td>Idiosyncratic reaction</td>
<td>Practice Setting†</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health Canada</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drug Manufacturer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ISMP (optional)</td>
</tr>
<tr>
<td></td>
<td>None</td>
<td>Practice Setting†</td>
</tr>
</tbody>
</table>

* Submit initial report as soon as possible. Submit final report upon conclusion of investigation. Report information requirements are provided in the next section.

† Further details about the Institute for Safe Medication Practices (ISMP) are found on pages 23 and 24.

Although this section deals strictly with drug errors and the adverse reactions that may arise from these errors, it is important to remember that clients may have adverse drug reactions that are not due to drug errors. The definition of **adverse drug reaction** (page 3) provides information about when to report these adverse drug reactions to Health Canada. To determine if adverse drug reactions that are not the result of a drug error require the submission of an **incident report** to CRDHA, use the three definitions below.

### Incident Report Requirements

Any critical incidents or adverse outcomes require that a written incident report is completed and submitted to the CRDHA forthwith. Incident reports must include the following:

1. Name, age, and sex of the person involved
2. Name of witness(es) to the incident
3. Date and name of procedure
4. Nature of the incident and treatment rendered
5. Analysis of reason(s) for the incident
6. Outcome

**Use the following definitions when determining how to report drug errors:**

**Adverse Outcome:** A harmful event for a client or personnel, where transfer to hospital with or without admission was necessary. In the event of a critical incident or adverse outcome of any kind, a written incident report must be completed and reported to the CRDHA forthwith.

**Critical Incident:** An event creating a substantial risk of serious health or safety consequences. In the event of a critical incident or adverse outcome of any kind, a written incident report must be completed and reported to the CRDHA forthwith.

**Idiosyncratic Reaction:** An unusual response to a drug that differs qualitatively from its usual, expected response.
Appendix A, Cont’d

The following is a sample drug error reporting form that may be used.

<table>
<thead>
<tr>
<th>CLIENT INFORMATION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name:</td>
<td></td>
</tr>
<tr>
<td>Last Name:</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
</tr>
<tr>
<td>Date of Birth:</td>
<td></td>
</tr>
<tr>
<td>Sex:</td>
<td></td>
</tr>
<tr>
<td>Telephone:</td>
<td></td>
</tr>
</tbody>
</table>

### PRESCRIPTION ISSUED
State drug, dosage regimen, strength, frequency, duration, dosage form, route, directions for use. (Can attach copy of prescription issued.)

### ERROR TYPE

<table>
<thead>
<tr>
<th>CLIENT INGESTED DRUG</th>
<th>CLIENT DID NOT INGEST DRUG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorrect dose</td>
<td>Incorrect client</td>
</tr>
<tr>
<td>Incorrect dosage form</td>
<td>Incorrect prescription</td>
</tr>
<tr>
<td>Incorrect drug</td>
<td>Incorrect generic selection</td>
</tr>
<tr>
<td>Incorrect quantity</td>
<td>Incorrect brand selection</td>
</tr>
<tr>
<td>Unknown Drug Reaction (Missed)</td>
<td>Drug Interaction (Missed)</td>
</tr>
<tr>
<td>Drug-drug, drug-food, drug-disease</td>
<td>Other</td>
</tr>
</tbody>
</table>

### STATE THE FACTS SURROUNDING THE ERROR
Do not include suggestion or subjective findings. To be completed by the dental hygienist involved with the error. Include contributing factors, treatment rendered, analysis of the incident, and the client outcome.

### NOTIFICATION

<table>
<thead>
<tr>
<th>Notification</th>
<th>Date</th>
<th>Time</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Client Notified</td>
<td>3 AM</td>
<td>Day / Month / Year</td>
<td></td>
</tr>
<tr>
<td>2. Pharmacy Notified</td>
<td>3 AM</td>
<td>Day / Month / Year</td>
<td></td>
</tr>
</tbody>
</table>

### SEVERITY

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>No change in client’s condition; no medical intervention required</td>
</tr>
<tr>
<td>Minor</td>
<td>Produced a temporary systemic or localized response; no ongoing complications</td>
</tr>
<tr>
<td>Major</td>
<td>Required immediate medical intervention</td>
</tr>
</tbody>
</table>

### INVESTIGATION OF DRUG ERROR

Identify the problem.

### CORRECTIVE ACTION

Indicate all that apply:

- Education to be provided
- Policy/procedure change needed
- System change needed
- Communicate corrective action with staff

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 AM</td>
<td></td>
</tr>
</tbody>
</table>

### EVALUATION

Was corrective action successful?

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ratian for 10 (ten) years from Discovery Data.
Appendix B: Issuing Accurate and Legal Prescriptions
(revised December 2007)

Prescriptions can be issued in two formats: written (which can be faxed) and verbal.

**Required Elements of Prescriptions**

The following required elements apply to prescriptions completed for an individual client or for professional office use. In accordance with the Regulations to the Food and Drug Act, provincial regulation and these guidelines, a complete prescription must include:

- Name and address of client (identification of client)
- Drug name and strength, if applicable
- Route of administration, if applicable
- Quantity of drug to be dispensed
- Directions for use
- Number of refills authorized and interval between each refill, if applicable
- Prescriber’s signature (for written)
- Prescriber’s ID number
- Prescriber’s name, address, and phone number, which can be pre-printed on the prescription form or legibly handwritten beneath the signature
- Date prescribed

In addition to the required elements for all prescriptions, facsimile transmissions must have the following:

- Prescriber’s fax number
- Time and date of transmission
- Name and fax number of the pharmacy intended to receive the transmission
- Signed certification that:
  1. the prescription represents the original of the prescription drug order
  2. the addressee is the only intended recipient and there are no others
  3. the original prescription will be invalidated, securely filed, and retained so that it cannot be re-issued.

**Recommended Elements**

In addition to the required elements for all forms of prescriptions, it is recommended that written prescriptions also contain the client’s date of birth and telephone number. Where appropriate, it is good practice to include on the prescription the reason for therapy or the expected outcome of therapy. A clear understanding about the objectives of therapy allows the pharmacist to complement the prescriber’s role through more focused counseling.
Client Identification
You must clearly identify the client so that the drug is delivered to the correct person. Identification must include the client’s surname, given name and address. To prevent confusion between people with the same name, add other identifying features, such as the client’s date of birth, sex, or telephone number.

All these features will aid the pharmacist in confirming the identity of the client. Date of birth, although not a required element, should be included in most instances, since this helps the pharmacist to confirm the proper dosage regimen. This is particularly significant for prescriptions issued to pediatric or geriatric clients.

A prescription must be issued only for one person. For example, if two people in the same family are to receive the same prescription drug, two separate prescriptions must be issued.

Prescription Pad
Forms must be large enough to contain complete information for each prescription.

Verbal Prescriptions
Recent literature on drug safety has highlighted two practices that are error-prone: the use of verbal prescriptions and the communication of a prescription to a pharmacist through an intermediary (Lesar, 2003 Nov., and Koczmara, Jelincic & Perri, 2006). Verbal or telephone prescriptions can be more easily misheard, misinterpreted, or transcribed incorrectly. In addition, the use of an intermediary to issue a verbal prescription may increase the potential for errors. It is due to these two safety concerns that CRDHA continues to uphold the following stipulations for the use of verbal or telephone prescriptions. These types of prescriptions:

1. Must be used only in emergent or urgent situations that call for immediate action or attention.
2. Can be exchanged between qualified practitioners only (e.g., from the dental hygienist prescriber to the pharmacist, but not from the receptionist to the pharmacist). Verbal communication between the pharmacist and the prescriber helps ensure client safety and minimizes errors.

To help minimize errors with verbal prescriptions, follow these recommended procedures:

1. Give your prescriber’s ID number to the pharmacist to confirm your identity as a prescriber.
2. Ensure that you state all the required elements of a prescription clearly to the pharmacist.
3. Spell out the drug names, however simple.
4. Say and spell numbers that are prone to confusion. For example, numbers such as fifteen (15) and sixteen (16) may be heard as fifty (50) and sixty (60).
5. Ensure your availability by phone or other communication methods in case the pharmacist needs to confirm or clarify the prescription.
**Drugs for Professional Use In-Office**

Prescription drugs may be required for professional office use. All required elements must be present in prescriptions issued for this purpose. With these prescriptions, record the “indication for use” as “for office use”. The pharmacist will enter the prescription in a record bearing the dental hygienist prescriber’s name.

**Stop Orders**

As part of the evaluation process, you may determine that a prescribed drug is no longer appropriate for the client (e.g., the client is not responding to the prescribed drug or the clinical need is no longer present). You may decide to discontinue use of that drug with or without prescribing an alternative drug. A stop order directs the pharmacist to no longer dispense any of the remaining drug.

A dental hygienist prescriber can put a stop order on a prescription issued personally or by another dental hygienist prescriber. Dental hygienist prescribers must not place stop orders on prescriptions issued by physicians, dentists or other health care providers.

All requirements of a prescription must be met when issuing a stop order on a drug. You can place a stop order by informing the client’s pharmacist in writing or by telephone.

Documentation indicating that you have placed a stop order on a previous prescription must be included in the client chart. This documentation must include the reason for the stop order.
Appendix C: Reducing Risk of Drug Errors
(revised December 2007)

As a dental hygienist, you can do your part to prevent or reduce drug errors as you work collaboratively with other members of the client’s healthcare team to ensure the safe use of drugs. The goal is to maintain the integrity of drug distribution and reduce or prevent adverse drug events.

Significance to Dental Hygiene Practice

- When confirming health history information, dental hygienists should confirm they have accurately listed the drugs, concomitant drug therapies, and client conditions. This will ensure that any possible contraindications for treatment, potential side-effects, etc. will not be missed. Gathering inaccurate information about the client could have serious adverse effects, such as incorrect conclusions about possible drug interactions (e.g., drug-drug or drug-food).
- Potential prescribing errors will be minimized if the prescribing dental hygienist takes precautions to minimize confusion.

Prescription Handwriting

Handwritten prescriptions must be accurate and legible. Legible penmanship and accurate spelling are essential. Use the following suggestions to improve the accuracy and legibility of your written prescriptions.

- Ensure all information on the prescription is accurate before issuing it to the client.
- Print your name legibly underneath your signature on each prescription.
- Make your prescription order “alteration proof” by using non-erasable ink.
- Take your time. Write slowly.
- Correct errors in the same manner as all documentation corrections.
- Print. Do not write.
- Print the drug name in block letters.
- Consider using a computer and commercially available prescription writing software.
- Use pre-printed prescription blanks for selected items

Practice Tip:
It is best to print rather than write to ensure legibility.

Drug Identification - Homonyms

Look-alike/sound-alike (LA/SA) health product names refer to names of different health products that have similarities when written or spoken. This name confusion may exist between two trade names, two generic names, or between brand and generic names. Statistics show that name confusion accounts for one of every four medication errors and that one of the most frequent causes of dispensing errors (29%) is due to look-alike/sound-alike (LA/SA) product names.

Clearly, mix-ups may result in serious consequences. To help minimize confusion, follow these guidelines when issuing prescriptions:

- Remain current in your awareness of LA/SA drug names.
• Print the full drug name in block letters; **do not abbreviate.** For drugs that are commonly mistaken, you can further reduce confusion by writing prescriptions with both the brand and generic name, if appropriate.

• Clearly specify the dosage regimen and complete directions for use to help the pharmacist differentiate between drugs.

• Include the “indication for use” to help the pharmacist differentiate between two or more possible drugs. In most cases, drugs that look or sound similar are used for different purposes.

• When issuing a verbal prescription, spell the name of the drug.

Examples of look-alike sound-alike (LA/SA) drugs are provided below:

<table>
<thead>
<tr>
<th>Look-Alike And Sound-Alike Drug Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clonazepam and Clorazepate</td>
</tr>
<tr>
<td>Ceftin and Coptin and Capoten</td>
</tr>
<tr>
<td>Chlorhexidine and Chlorpromazine</td>
</tr>
<tr>
<td>Ditropan and Diazepam</td>
</tr>
<tr>
<td>Decadron and Percodan</td>
</tr>
<tr>
<td>Demerol and Demulen</td>
</tr>
<tr>
<td>Elavil and Enbrel</td>
</tr>
<tr>
<td>Ephedrine and Epinephrine</td>
</tr>
</tbody>
</table>

The list below provides you with a few resources that can provide additional strategies to help minimize the risk of LA/SA name mix-ups.

<table>
<thead>
<tr>
<th>Description</th>
<th>Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Canada has information regarding LA/SA names on its website, including an entire section entitled <em>Look-Alike Sound-Alike Health Product Names.</em></td>
<td><a href="http://www.hc-sc.gc.ca/dhp-mps/brgtherap/proj/alike-ssemblable/index_e.html">http://www.hc-sc.gc.ca/dhp-mps/brgtherap/proj/alike-ssemblable/index_e.html</a></td>
</tr>
<tr>
<td>Send your questions regarding LA/SA health products directly to Health Canada.</td>
<td>Email: <strong><a href="mailto:BPTD_PPD_DPP@hc-sc.gc.ca">BPTD_PPD_DPP@hc-sc.gc.ca</a></strong>&lt;br&gt;Phone: (613) 954-1798</td>
</tr>
<tr>
<td>ISMP’s <em>List of Confused Drug Names. Safety bulletins are also released on ISMP’s web-site as other LA/SA drugs are identified.</em></td>
<td><a href="http://www.ismp.org/Tools/confuseddrugnames.pdf">http://www.ismp.org/Tools/confuseddrugnames.pdf</a></td>
</tr>
<tr>
<td>JCAHO provides a list of the most problematic look-alike/sound-alike drug names for specific health care settings. Strategies that can be implemented are also included. Reviewed annually by JCAHO.</td>
<td><a href="http://www.jointcommission.org/NR/rdonlyres/C92AAB3F-A9BD-431C-8628-11DD2D1D53CC/0/lasa.pdf">http://www.jointcommission.org/NR/rdonlyres/C92AAB3F-A9BD-431C-8628-11DD2D1D53CC/0/lasa.pdf</a></td>
</tr>
</tbody>
</table>
Correct Use of Abbreviations

Incorrect use and misinterpretation of abbreviations are common sources of drug errors. Commonly misinterpreted abbreviations should not be used when communicating medical or dental information. This includes in-office communications and all forms of prescriptions and labels. Employ these abbreviation strategies in all forms of communications:

• Use only the metric system of weights and measures when issuing prescriptions.
• Never abbreviate drug names.
• Avoid using abbreviations, symbols, and dose designations that are frequently misinterpreted. Only the most common Latin abbreviations should appear on the prescription (e.g. “sig”).
• When in doubt, write it out.

The Institute for Safe Medication Practices provides updated lists regarding abbreviations, symbols, and dose designations that have contributed to medication errors. For further information, please go to [http://www.ismp.org](http://www.ismp.org) or [http://www.ismp-canada.org](http://www.ismp-canada.org). The following error-prone abbreviations, symbols and dose designations, although not an exhaustive list, have been identified as ones that may affect dental hygienist prescribers and should be considered for handwritten, pre-printed, and electronic forms of communication:

<table>
<thead>
<tr>
<th>Abbreviations</th>
<th>Intended Meaning</th>
<th>Misinterpretation</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>µg</td>
<td>Microgram</td>
<td>Mistaken as “mg”</td>
<td>Use “mcg”</td>
</tr>
<tr>
<td>BT</td>
<td>Bedtime</td>
<td>Mistaken as “BID” (twice daily)</td>
<td>Use “bedtime”</td>
</tr>
<tr>
<td>cc</td>
<td>Cubic centimeters</td>
<td>Mistaken as “u” (units)</td>
<td>Use “mL”</td>
</tr>
<tr>
<td>D/C</td>
<td>Discharge or discontinue</td>
<td>Premature discontinuation of medications if D/C (intended to mean “discharge”) has been misinterpreted as “discontinued” when followed by a list of discharge medications</td>
<td>Use “discharge” and “discontinue”</td>
</tr>
<tr>
<td>IJ</td>
<td>Injection</td>
<td>Mistaken as “IV” or “intrajugular”</td>
<td>Use “injection”</td>
</tr>
<tr>
<td>IN</td>
<td>Intranasal</td>
<td>Mistaken as “IM” or “IV”</td>
<td>Use “intranasal” or “NAS”</td>
</tr>
<tr>
<td>HS</td>
<td>Half-strength</td>
<td>At bedtime, hours of sleep</td>
<td>Mistaken as bedtime</td>
</tr>
<tr>
<td>hs</td>
<td></td>
<td></td>
<td>Mistaken as half-strength</td>
</tr>
<tr>
<td>IU**</td>
<td>International unit</td>
<td>Mistaken as IV (intravenous) or 10 (ten)</td>
<td>Use “units”</td>
</tr>
<tr>
<td>o.d. or OD</td>
<td>Once daily</td>
<td>Mistaken as “right eye” (OD-culus dexter), leading to oral liquid medications administered in the eye</td>
<td>Use “daily” or “every day”</td>
</tr>
<tr>
<td>Per os</td>
<td>By mouth, orally</td>
<td>The “os” can be mistaken as “left eye” (OS-culus sinister)</td>
<td>Use “PO,” “by mouth,” or “orally”</td>
</tr>
<tr>
<td>q.d. or QD**</td>
<td>Every day</td>
<td>Mistaken as q.i.d., especially if the period after the “q” or the tail of the “q” is misunderstood as an “i”</td>
<td>Use “daily” or “every day”</td>
</tr>
<tr>
<td>Abbreviations</td>
<td>Intended Meaning</td>
<td>Misinterpretation</td>
<td>Correction</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
<td>------------------</td>
<td>------------</td>
</tr>
<tr>
<td>qhs</td>
<td>Bedtime</td>
<td>Mistaken as “qhr” or every hour</td>
<td>Use “at bedtime”</td>
</tr>
<tr>
<td>qn</td>
<td>Nightly</td>
<td>Mistaken as “qh” (every hour)</td>
<td>Use “at bedtime” or “nightly”</td>
</tr>
<tr>
<td>q.o.d. or QOD**</td>
<td>Every other day</td>
<td>Mistaken as “q.d.” (daily) or “q.i.d. (four times daily) if the “o” is poorly written</td>
<td>Use “every other day”</td>
</tr>
<tr>
<td>q1d</td>
<td>Daily</td>
<td>Mistaken as q.i.d. (four times daily)</td>
<td>Use “daily”</td>
</tr>
<tr>
<td>q6PM, etc.</td>
<td>Every evening at 6 PM</td>
<td>Mistaken as every 6 hours</td>
<td>Use “6 PM nightly” or “6 PM daily”</td>
</tr>
<tr>
<td>SC, SQ, sub q</td>
<td>Subcutaneous</td>
<td>mistaken as SL (sublingual); SQ mistaken as “5 every;” the “q” in “sub q” has been mistaken as “every” (e.g., a heparin dose ordered “sub q 2 hours before surgery” misunderstood as every 2 hours before surgery)</td>
<td>Use “subcut” or “subcutaneously”</td>
</tr>
<tr>
<td>i/d</td>
<td>One daily</td>
<td>Mistaken as “tid”</td>
<td>Use “1 daily”</td>
</tr>
<tr>
<td>TIW or tiw</td>
<td>3 times a week</td>
<td>Mistaken as “3 times a day” or “twice in a week”</td>
<td>Use “3 times weekly”</td>
</tr>
<tr>
<td>U or u **</td>
<td>Unit</td>
<td>Mistaken as the number 0 or 4, causing a 10-fold overdose or greater (e.g., 4U seen as “40”; or 4u seen as “44”); mistaken as “cc” so dose given in volume instead of units (e.g., 4u seen as 4cc)</td>
<td>Use “unit”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dose Designations &amp; Other Information</th>
<th>Intended Meaning</th>
<th>Misinterpretation</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trailing zero after decimal point (e.g., 1.0 mg)**</td>
<td>1 mg</td>
<td>Mistaken as 10 mg if the decimal point is not seen</td>
<td>1 mg; do not use trailing zeros for doses expressed in whole numbers</td>
</tr>
<tr>
<td>No leading zero before a decimal dose (e.g., .5 mg))**</td>
<td>0.5 mg</td>
<td>Mistaken as 5 mg if the decimal point is not seen</td>
<td>0.5 mg; use a zero before a decimal point when the dose is less than a whole unit</td>
</tr>
<tr>
<td>Drug name and dose run together (especially for problematic for drug names that end in “L” such as Inderal40 mg; Tegretol300 mg)</td>
<td>Inderal 40 mg Tegretol 300 mg</td>
<td>Mistaken as Inderal 140 mg Tegretol 1300 mg</td>
<td>Place adequate space between the drug name, dose, and unit of measure</td>
</tr>
<tr>
<td>Numerical dose and unit of measure run together (e.g., 10mg, 100mL)</td>
<td>10 mg 100 mL</td>
<td>The “m” is sometimes mistaken as a zero or two zeros, risking a 10-fold overdose</td>
<td>Place adequate space between the dose and unit of measure</td>
</tr>
</tbody>
</table>
### Dose Designations & Other Information

<table>
<thead>
<tr>
<th>Abbreviations such as mg. or mL. with a period following the abbreviation</th>
<th>Intended Meaning</th>
<th>Misinterpretation</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>mg mL</td>
<td>The period is unnecessary and could be mistaken as the number 1 if written poorly</td>
<td>Use mg, mL, etc. without a terminal period</td>
<td></td>
</tr>
</tbody>
</table>

| Large doses without properly placed commas (e.g., 100000 units; 1000000 units) | 100,000 units 1,000,000 units | 100000 has been mistaken as 10,000 or 1,000,000; 1000000 has been mistaken as 100,000 | Use commas for dosing units at or above 1,000, or use words such as 100 “thousand” or 1 million” to improve readability |

### Symbols

<table>
<thead>
<tr>
<th>Symbols</th>
<th>Intended Meaning</th>
<th>Misinterpretation</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>₵</td>
<td>Dram</td>
<td>Symbol for dram mistaken as “3”</td>
<td>Use the metric system</td>
</tr>
<tr>
<td>₢</td>
<td>Minim</td>
<td>Symbol for minim mistaken as “mL”</td>
<td></td>
</tr>
<tr>
<td>x3d</td>
<td>For three days</td>
<td>Mistaken as “3 doses”</td>
<td>Use “for three days”</td>
</tr>
<tr>
<td>&gt; and &lt;</td>
<td>Greater than and less than</td>
<td>Mistaken as opposite of intended; mistakenly use incorrect symbol; “&lt; 10” mistaken as “40”</td>
<td>Use “greater than” or “less than”</td>
</tr>
<tr>
<td>/ (slash mark)</td>
<td>Separates two doses or indicates “per”</td>
<td>Mistaken as the number 1 (e.g., “25 units/10 units” misread as “25 units and 110 units”)</td>
<td>Use “per” rather than a slash mark to separate doses</td>
</tr>
<tr>
<td>@</td>
<td>At</td>
<td>Mistaken as “2”</td>
<td>Use “at”</td>
</tr>
<tr>
<td>&amp;</td>
<td>And</td>
<td>Mistaken as “2”</td>
<td>Use “and”</td>
</tr>
<tr>
<td>+</td>
<td>Plus or and</td>
<td>Mistaken as “4”</td>
<td>Use “and”</td>
</tr>
<tr>
<td>°</td>
<td>Hour</td>
<td>Mistaken as a zero (e.g., q2° seen as q 20)</td>
<td>Use “hr,” “h,” or “hour”</td>
</tr>
</tbody>
</table>

** Identified abbreviations in all sections are also included on the USA Joint Commission on Accreditation for Healthcare Organization’s “minimum list” of dangerous abbreviations, acronyms and symbols that must be included on an organization’s “Do Not Use” list, effective January 1, 2004. Further information can be found on their website at [www.jcaho.org](http://www.jcaho.org).

Revised from: Institute for Safe Medication Practices. (March 2004). *ISMP List of Error-Prone Abbreviations, Symbols, and Dose Designations.* ISMP
**Date**
The date allows the pharmacist to identify prescriptions that have not been filled at the time of issuance. You may want to indicate a cut-off date after which the prescription may not be filled or renewed.

**Directions for use**
As noted earlier, “complete directions for use” is a required component of all prescriptions. Placing the indication for use in the directions benefits the client, the pharmacist and the prescriber.

**As Directed** is not considered an acceptable direction for use. Complete directions for use consists of statements like “Take one tablet every four hours as needed for dental pain.”

Three important reasons for the requirement that complete directions for use are mandatory are:
1. Verbally communicated instructions (directions) for drug use to clients may not be recalled precisely and accurately.
2. Complete written directions (e.g., take 1 tablet daily) enable the pharmacist to counsel the client and reinforce the prescriber’s instructions.
3. Complete written directions help pharmacists maintain client profiles of information about prescriptions dispensed, directions for use, medical conditions and other pertinent information.

**Dosage Regimen**
The client’s sex, age, renal and hepatic function, body size, and state of health should be considered when determining the dosage regimen (strength, frequency, and duration) for the client.

Many drug products exist in different strengths. As a prescriber, you are encouraged to consult a drug reference guide to determine which strengths are available for use. When specifying the dosage, the prescriber must clearly indicate the strength of the drug as well as the quantity per dose and the route of administration. Ambiguity in this area is a frequent cause of error.

The total quantity of the drug dispensed indicates the **duration of therapy**. The duration of therapy is determined in one of two ways:

**Method 1: Use both the DISP and SIG lines.** Duration of therapy is determined by the total quantity of drug to be dispensed (e.g., 20 tablets) along with the “Sig”: information (e.g., take 1 tablet daily)

**Method 2: Use only the SIG line with time indicated.** Duration of therapy is determined by the period of time indicated in the “Sig”: (e.g., one tablet three times a day for 10 days). In this second method, the Disp line is eliminated since “for 10 days” identifies the duration of therapy.

When writing prescriptions, avoid using trailing zeros (For example, when a dose is written as 1.0 mg the decimal point may not be seen and the dose may be interpreted as 10 mg. The dose should be written as 1 mg. Similarly, when quantities less than one are written, use a leading zero to avoid errors. A dosage of .5 mg. may be seen as 5 mg. The dose should be written as 0.5 mg. Refer to the list under “Abbreviations” for further examples).
Refills

Refills for drugs prescribed by dental hygienists are not routinely required. When there is a documented dental hygiene need, and current drug therapy is achieving a desired therapeutic response, refills, if permitted by law, can be indicated on the prescription. The total quantity of the prescription must be written. Pharmacists can only dispense the total quantity. However, specified quantities may be dispensed at prescribed intervals.

Dental hygienist prescribers should utilize the following criteria to determine whether a refill is indicated:

- Is there a documented clinical need that the drug is addressing or can address?
- Is the current drug therapy achieving the desired result?
- Is the client experiencing any adverse effects from this drug use? (Issuing a prescription with refills should only be considered if the client is not experiencing adverse effects)
- Will continuation of this drug therapy be required long term to maintain the desired results?
- Is the dosage of the drug stable (i.e. the dosing has not recently changed nor is predicted to change in the foreseeable future)

As noted previously, under prescription requirements, if a refill is indicated, the dental hygienist prescriber must include the following refill information: number of refills authorized and interval between each refill, if applicable.
Appendix D: Faxing a Prescription
(revised December 2007)

The facsimile transmission (faxing) of a prescription for any drug is acceptable if the principles of security, client confidentiality, integrity of distribution, accuracy, and client choice are maintained. Follow these procedures to ensure the principles are preserved:

1. Send the prescription to one pharmacy only.

2. Send the prescription to a licensed or publicly funded pharmacy of the client’s choice, with no intervening person having access to the prescription drug order.

3. Send the prescription directly from the prescriber using a secure, confidential, reliable and verifiable fax machine. In this instance, verifiable means that the information included on a faxed prescription must allow the pharmacist to call or fax the prescriber back to confirm the prescription information and ask any questions.

4. After transmission, the prescriber or the prescriber’s agent (e.g., receptionist) must ensure that the original written prescription has been invalidated, securely filed, retained for a minimum period of no less than that defined in the statute of limitations, be available for inspection, and not transmitted elsewhere at another time.

Invalidating Faxed Prescriptions:

It is important to invalidate faxed prescriptions so that they cannot be retransmitted. To invalidate a prescription, the following information should be legibly handwritten or stamped on the original prescription after it has been transmitted:

1. Date and time the prescription was faxed
2. Name of the pharmacy it was faxed to
3. Name or signature of the person (prescriber or the prescriber’s agent) who faxed the prescription

Be sure that when a prescription is invalidated, critical information such as the dosage regimen and drug name are still legible. Attaching a copy of the fax transmission information may also be helpful documentation since it shows evidence of the time, date and whether a fax was successfully transmitted.

Electronic Transmissions

1. E-mailed prescriptions are not considered acceptable or valid.


Appendix D, continued

Faxing a Prescription
The following is a sample prescription form that may be used by the prescriber when faxing prescription orders:

SAMPLE PRESCRIBER'S LETTERHEAD
Prescriber name/ Clinic name
Prescriber address
Prescriber telephone number/ facsimile number

Confidential Facsimile Transmission:

Pharmacy name: ____________________________
Pharmacy fax #: ____________________________ Number of pages sent: 1
Date: _____________ Time: _____________

Client Information
First Name: ____________________________ Last Name: ____________________________
Address: ____________________________
Date of Birth: _____________ Sex: ________ Telephone: ____________________________

A copy of this original prescription has been sent with the client for the pharmacy to verify the accuracy of the faxed prescription:
☐ Yes  ☐ No

Please note: If a copy of this original prescription is sent with the client, the words “For Verification Purposes: Prescription Previously Fax’d” will be on the copy.

Rx

Prescriber Certification
This prescription represents the original of the prescription drug order. The pharmacy addressee noted above is the only intended recipient and there are no others. The original prescription will be invalidated and securely filed, and it will not be transmitted elsewhere at another time.

Prescriber's Name: (print) ____________________________ (signature) ____________________________
Prescriber's ID #: ____________________________ Date: ____________________________

Verification: This certifies the above prescription has been transmitted only to the pharmacy indicated.

Sender's Name: (print) ____________________________ (signature) ____________________________

INVALIDATION CONFIRMATION (For in-office use only, following successful transmission of prescription)
I confirm that the following prescription has been invalidated:
☐ Yes
A copy of the fax transmission information is attached to the prescription:
☐ Yes  ☐ No
Date and Time fax sent: ____________________________

Name: (print) ____________________________ (signature) ____________________________

If the reader of this message is not the intended recipient, you are hereby notified that this information is private and confidential. Any distribution or copying of this document is strictly prohibited. If you have received this transmission in error, please contact us immediately by telephone and return the original facsimile to us at the above address by regular mail. Thank you.
Appendix E: Canada Vigilance Program

Health Canada has renamed the Canadian Adverse Drug Reaction Monitoring Program to the Canada Vigilance Program. The purpose remains the same — that collects and assesses reports of suspected adverse reactions to health products marketed in Canada. Post-market surveillance enables Health Canada to monitor the safety profile of health products once they are marketed to ensure that the benefits of the products continue to outweigh the risks. The most recent version of the guidelines and a sample reporting form will be included in this appendix.
Appendix F: Labelling Standards

These Labelling Standards provide the requirements for prescription and non-prescription drugs.

The majority of oral care products you will “sell” to your clients do not require a prescription. These drugs may be Schedule 2 products identified in the Dental Hygienists Profession Regulation, Schedule 3, unscheduled drugs, or natural health products. However, because of the higher strengths of many of the products you may provide to your clients and the potential for misuse or adverse events, many are still considered “for professional use” by Health Canada. Dental products included in Health Canada’s “Professional Use Standards” exceed the acceptable limits set for over-the-counter dental products. Formulations in this category include dentifrices, treatment gels/rinses, and varnishes.

A. Labelling Standard for Prescription Drugs Sold In-Office and Non-Prescription Drugs Re-Packaged and Sold In-Office

All prescription drugs that are sent home with the client should be correctly and legibly labelled. The prescription label should be accurate according to the prescription and contain the information required under this standard, which encompasses federal and provincial legislation. When a client has special needs, such as visual impairment or does not read English, you may use a label that facilitates better understanding, such as larger font or a label that has clear visual explanations. The label must contain:

- Client name
- Clinic name, address and telephone number
- Prescriber’s name
- Description of the drug in English including
  - drug name (generic) brand name(if applicable), manufacturer
  - drug strength and quantity
- Instructions for use (Supplement the label instructions with additional written and/or verbal instructions as necessary)
- Date
- Unique prescription number
- Expiry date if appropriate

Label Placement. If it is not practical to place the label directly onto the drug package, attach the complete label to an outer container. The inside drug package must still have another label that has the client’s name, drug name, and strength. Remember, these two packages will likely get separated, causing potential confusion about the drug within the container. Without that inner label, an adverse drug event may occur.

If you are re-packaging and providing non-prescription drugs to your clients, ensure that you meet Health Canada’s applicable labelling standard. The labelling standard you will
have to meet is dependent on the product you are re-packaging. The table provided at the end of this Appendix shows Health Canada’s Labelling Standards for Oral Care Products.

**Packaging:** The packaging should ensure safety, integrity and stability of the drug. Give careful consideration to the drug’s sensitivity to light and temperature.

Child-resistant packaging should be used, unless otherwise indicated. One example would be if a client had rheumatoid arthritis and could not open a package with a child-resistant cap. In these cases, the dental hygienist must be sure to warn the client of the potential risk of not having child-resistant packaging.

**Practice Tip:** If the same dental hygienist is prescribing and providing the drug to a client, another competent second person must confirm the accuracy of the drug and the drug labelling prior to providing the drug to the client.

**B. Labelling Standards for Non-Prescription Dental and Oral Care Products for Professional Use (straight from the Manufacturer) and Sold In-office:**

For most of the dental/oral care products you will provide to your clients, the appropriate labelling information comes directly from the manufacturer. No additional labelling will have to be incorporated before you give these products to the client provided the manufacturer meets the labelling requirements.

Health Canada develops standards that the manufacturer must meet before providing these products to the consumer or health professionals. These standards vary depending on whether the non-prescription product is categorized by Health Canada as a drug or an NHP. The following table shows Health Canada’s labelling standards for dental and oral products for professional use. Health Canada can revise the standards, so always refer to their website for the latest drug or NHP labelling information.

A summary of the most recent version of Health Canada’s Labelling Standards will be included in this appendix.
Appendix G: Client Health History

A complete and thorough legal document that contains information about the client’s past and present medical and dental conditions, risk factors for disease, a drug profile, undiagnosed conditions and allergies or sensitivities. The health history should also include information about the client’s lifestyle; cultural practices related to health and disease, past and present emotional problems, and general state of mind. This written report is obtained from the health history questionnaire, a verbal interview, and direct client observation.

Determination of client health history, (including the drug profile), shall include, but is not limited to, assessment of:

- disease states, health (or medical) conditions
- allergies and sensitivities
- possible side effects and interactions
- risk factors (e.g., family medical history, diet)
- drug and natural health product therapies
- social history e.g. alcohol and/or tobacco use
- client compliance

Remember: A complete drug profile is part of the client’s comprehensive health history. The drug profile includes a comprehensive list of drugs (prescription and non-prescription) that the client is currently taking, or has taken, since the last update of the client’s health history. Non-prescription drugs must include drugs listed in Schedules 2 and 3 of Alberta’s Drug Schedules, unscheduled drugs, alcohol, tobacco, and natural health products not encompassed in the provincial drug schedules. The drug profile should also include any known allergies or sensitivities that the client has to any drugs. The client drug profile is used when developing a care plan and will aid the registered dental hygienist in determining possible contraindications and adverse effects such as drug-drug interactions and drug-food interactions.
References


References (continued)


### DH Regulation

| (a) for the purpose of assessing or treating oral health conditions but not for the purpose of performing restoration procedures of a permanent nature, to cut a body tissue, to administer anything by an invasive procedure on body tissue or to perform surgical or other invasive procedures on body tissue below the dermis or the mucous membrane or in or below the surface of teeth, including scaling of teeth; | This restricted activity is intended to allow dental hygienists to perform a variety of therapeutic and preventive therapy procedures that are classified as restricted activities because they involve cutting of tissue or invasive procedures. Examples of these restricted activities include:

- periodontal probing
- periodontal debridement including scaling, root planing and soft tissue curettage using hand or powered instruments
- gingival irrigation
- placement of anti-microbial agents into the gingival sulcus
- placement of dressings
- use of air abrasion prior to placement of sealants
- placement of temporary restorations, not including cutting of the cavity preparation
- administration of local anaesthetic by injection for oral nerve block or infiltration anaesthesia following completion of a Council-approved course. The University of Alberta Local Anaesthesia Continuing Education Course is the CRDHA Council-approved course and serves as the benchmark for educational qualifications regarding this restricted activity. Members must apply for a CRDHA Local Anaesthesia Certificate prior to incorporating this restricted activity into their scope of practice. |

<p>| (b) to insert or remove instruments, devices, fingers or hands beyond the pharynx for oral soft tissue examinations; | This authorization allows regulated members to perform routine comprehensive intra-oral examinations including assessment of the oral-pharyngeal soft tissues as one of the components of client assessment prior to provision of dental hygiene care. |</p>
<table>
<thead>
<tr>
<th>DH Regulation</th>
<th>Clarification for CRDHA Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c) to reduce a dislocation of a temporomandibular joint for the purpose of reducing a subluxation of the temporomandibular joint;</td>
<td>“Subluxation” is an incomplete or partial dislocation or a joint. Subluxation of the temporomandibular joint occasionally occurs during the provision of dental hygiene treatment. If the subluxation cannot be self-reduced by the client, the dental hygienist will assist the client by placing thumbs intra-orally and against the mandible adjacent to the posterior teeth, curving fingers and placing them under the body of the mandible, press down and back with thumbs, and at the same time pulling up and forward with fingers so the joint slips back in place.</td>
</tr>
</tbody>
</table>
| (d) to prescribe the following Schedule 1 drugs within the meaning of Schedule 7.1 to the Government Organization Act for the purpose of treating oral health conditions, providing prophylaxis and treating emergencies: | “Prescribe” as defined in the Pharmaceutical Profession Act means a direction given verbally or in writing by a practitioner who is authorized by the Lieutenant Governor in Council to prescribe drugs directing a pharmacist or restricted practitioner to dispense, for the person named in the direction, a stated amount of a drug specified in the direction. Schedule 1 drugs require a prescription as a condition of sale. Drugs in this schedule include all the federally scheduled drugs, referred to in the Food and Drug Regulations (Canada) as Part I and II in Schedule F, and certain others which are specific to Alberta. Drugs listed in Schedule 1 of the Pharmaceutical Profession Act (Alberta) are subject to the same regulations as drugs listed in Part I and II in Schedule F in the Food and Drug Regulations (Canada). Schedule 1 drugs do not include controlled substances such as narcotics. Although all dental hygiene educational programs teach the competencies required to prescribe, until implementation of the HPA, dental hygienists did not have the formal authority to sign prescriptions. Members cannot automatically begin signing prescriptions. A dental hygienist, like all authorized prescribers, must have a valid prescriber’s identification (ID) number in order to issue prescriptions. CRDHA members must apply to the CRDHA for a prescriber's ID number. Members who apply for a prescriber ID number must successfully complete a Council-approved pharmacy refresher course that will provide information and assess the applicant's knowledge related to:  
- applicable legislation, standards of practice and prescribing guidelines  
- appropriate and accurate prescription writing  
- requirements for documentation  
- current knowledge of drugs used in dental hygiene practice  
- communication and collaboration with other health professionals  
- prevention, identification and management of adverse drug reactions  
- accessing appropriate resources for up-to-date drug and prescribing information  
Upon successful completion of the required course, a prescriber’s ID number will be issued and the regulated member’s name will be entered onto the CRDHA’s prescriber roster. The Alberta College of Pharmacists will be notified of the prescriber's name and ID number and any future cancellation of that prescriber number. |
<table>
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<tr>
<th>DH Regulation</th>
<th>Clarification for CRDHA Members</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>(Repeated)</em> <em>(d)</em> to prescribe the following Schedule 1 drugs within the meaning of Schedule 7.1 to the Government Organization Act for the purpose of treating oral health conditions, providing prophylaxis and treating emergencies:</td>
<td>Authorization to prescribe Schedule 1 drugs is solely related to prescription of drugs used in dental hygiene practice. Dental hygienists are not authorized to prescribe drugs for any other conditions such as sore throats, ear infections, etc. The CRDHA has developed Guidelines Regarding Prescription and Non-Prescription Drugs in Dental Hygiene Practice. The Guidelines will be incorporated into a Member Handbook. Following, are examples of the Schedule 1 drugs used in dental hygiene practice:</td>
</tr>
<tr>
<td>(i) antibiotics;</td>
<td>i. Antibiotics are routinely used for the purposes of pre-medication* prior to initiating dental hygiene treatment and for the prevention or treatment of periodontal disease and infections. Some examples of antibiotics used for pre-medication are penicillins, clindamycin, and cephalosporins. An example of an antibiotic commonly used for periodontal treatment is tetracycline. Controlled release methods may be used for intracrevicular delivery (fibres, chips, microspheres, gels).</td>
</tr>
<tr>
<td>(ii) antifungal agents;</td>
<td>ii. Anti-fungal agents, such as nystatin, are used to treat oral conditions such as Candidiasis.</td>
</tr>
<tr>
<td>(iii) anti-infective agents;</td>
<td>iii. Anti-infective agents are used for pre-medication for those allergic to penicillins and to prevent or treat periodontal disease and infections. Two examples of anti-infective agents are: chlorhexidine gluconate and metronidazole.</td>
</tr>
<tr>
<td>(iv) antiviral agents;</td>
<td>iv. Anti-viral agents may be prescribed for the treatment or relief of oral herpetic lesions. One example of this is acyclovir.</td>
</tr>
<tr>
<td>(v) bronchodilators;</td>
<td>v. Bronchodilators, such as salbutamol, may be used when a medical emergency arises during the provision of dental hygiene services. This is a standard emergency kit item.</td>
</tr>
<tr>
<td>(vi) epinephrine;</td>
<td>vi. Injectable local anaesthetics with epinephrine are routinely utilized for pain management purposes when providing dental hygiene treatment.</td>
</tr>
<tr>
<td>(vii) fluoride;</td>
<td>vii. Fluoride is no longer a Schedule 1 drug in the amounts and preparations used in oral health settings. Some examples of commonly used fluorides are sodium fluoride drops or tablets, stannous fluoride gel (GelKam) and fluoride-containing varnish (e.g. Duraflor). Currently, none of the oral care fluoride products require a prescription. Most “dental” fluorides are now classified as Schedule 3 drugs in Alberta.</td>
</tr>
<tr>
<td>(viii) pilocarpine;</td>
<td>viii. Pilocarpine agents, such as Salagen tablets, may be used as treatment for dry mouth (xerostomia).</td>
</tr>
<tr>
<td>(ix) topical corticosteroids;</td>
<td>ix. Topical corticosteroids, such as triamcinolone acetonide dental paste, may be used for the treatment of oral inflammatory and ulcerative lesions.</td>
</tr>
<tr>
<td>* Guidelines for the prescription of oral antibiotics for prophylaxis (pre-medication) are clearly set out by the American Heart Association and the American Academy of Orthopaedic Surgeons. Dental hygienists are expected to use the most current guidelines.</td>
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<tr>
<td>DH Regulation</td>
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<tr>
<td>(e) to compound, provide for selling or sell, incidentally to the practice of dental hygiene, a Schedule 1 drug or Schedule 2 drug within the meaning of Schedule 7.1 to the Government Organization Act;</td>
<td>You do not require a prescriber’s ID number to perform this restricted activity. The authority to perform the restricted activity of compounding, providing for sale or selling does not mean that registered dental hygienists will now be able to compound or sell drugs in the same manner as pharmacists. There is no intent for dental hygienists to establish store front sales centres for prescription or non-prescription drugs used in providing dental hygiene services. The authorization to compound, provide for sale or sell is merely intended to provide flexibility to meet client needs where a pharmacy is not readily accessible or client compliance is an issue.</td>
</tr>
<tr>
<td></td>
<td>In Schedule 7.1 of the GOA, <em>compound</em> is defined as “to mix together 2 or more ingredients of which at least one is a drug for the purposes of dispensing a drug or drugs, but does not include reconstituting a drug or drugs with only water.” There are some instances in dental hygiene practice where a member might engage in compounding. One such example is the mixing of Benadryl liquid and Kapectate for a client to use as a rinse for relief of pain from aphthous ulcers.</td>
</tr>
<tr>
<td></td>
<td>Keeping a supply of Schedule 1 or 2 drugs in a dental hygiene practice and giving or charging for the drugs being used during the course of dental hygiene treatment or to be used by the client in follow-up care is interpreted as providing for sale or selling. Many practices keep a supply of routinely used drugs on-site and give or sell the drug to the client to get them started with their oral care regimen. Once the client is engaged in the oral care program, repeat prescriptions can be dispensed through a pharmacy. Schedule 1 drugs require a prescription as a condition of sale. Schedule 2 drugs do not require a prescription as a condition of sale. Schedule 2 drugs are less strictly regulated, but do require professional intervention with an appropriately qualified healthcare practitioner. In a pharmacy, Schedule 2 drugs are sold from an area to which there is no public access and no opportunity for client self-selection.</td>
</tr>
<tr>
<td>(f) to order or apply any form of ionizing radiation in medical radiography.</td>
<td>Authorization to perform this restricted activity is for the purpose of ordering, exposing and interpreting intra-oral or extra-oral dental radiographs as a part of dental hygiene practice and does not include the ordering of ionizing radiation for any other medical diagnostic purpose or for any form of dental or medical radiation therapy. Dental hygienists who have completed the appropriate theoretical and clinical education are also authorized to use lasers for dental hygiene procedures including tooth bleaching and periodontal therapy. Dental hygienists can own dental radiation equipment, including lasers. All dental x-ray equipment, including digital radiography systems, and any Class 3b or Class 4 lasers used for dental hygiene procedures must be installed, registered and monitored in accordance with the Alberta Radiation Protection Act and Regulation. If you have acquired or purchased radiation equipment, you must contact the CRDHA office for directions regarding registration and inspection of the equipment prior to operating the equipment.</td>
</tr>
<tr>
<td>DH Regulation</td>
<td>Clarification for CRDHA Members</td>
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<td>(2) A general member or a courtesy member who has provided evidence satisfactory to the Registrar of having completed and remaining current in the advanced training required by the Council and who has received notification from the Registrar that the authorization is indicated on the general register or the courtesy register is authorized to perform the following restricted activities:</td>
<td>Members are not automatically authorized to perform the advanced practice restricted activities in 13(2)(a) through (c).</td>
</tr>
<tr>
<td>(a) to prescribe or administer nitrous oxide for the purposes of conscious sedation;</td>
<td>This restricted activity may only be performed by a regulated member who has completed a Council-approved nitrous oxide/oxygen conscious sedation course and whose name has been entered on the CRDHA roster of dental hygienists who are qualified to perform this procedure. The University of Alberta Nitrous Oxide/Oxygen Conscious Sedation Course is the CRDHA Council-approved course and serves as the benchmark for educational qualifications regarding this restricted activity. Following completion of an approved course, registrants must apply to have their names entered on the CRDHA roster of dental hygienists who are authorized to administer nitrous oxide/oxygen conscious sedation. CRDHA’s Guidelines for Prescribing and Administering Nitrous Oxide/Oxygen Conscious Sedation in Dental Hygiene Practice are sent to all members with their authorization to prescribe and administer nitrous oxide/oxygen. Dental hygienists without approved advanced training must not provide treatment to a client who is receiving nitrous oxide/oxygen conscious sedation unless another provider authorized to order and administer nitrous oxide/oxygen conscious sedation remains in the operatory for the duration of the treatment.</td>
</tr>
<tr>
<td>(b) in collaboration with a dentist, to fit an orthodontic or periodontal appliance for the purpose of determining the preliminary fit of the appliance;</td>
<td>The University of Alberta Orthodontic Module is the CRDHA Council-approved course and serves as the benchmark for educational qualifications related to the preliminary fitting of orthodontic and periodontal appliances. The U of A course includes the preliminary fitting of the most commonly used appliances (e.g. Maxillary Hawley, Maxillary and Mandibular Space Maintainers (Holding Arches), Palatal Expansion Appliance, and splints). CRDHA is currently in the processes of establishing policies regarding approval of other orthodontic training courses, receipt of evidence of satisfactory completion of such courses, and evidence of currency in the performance of the restricted activity of preliminary fitting of orthodontic and periodontal appliances. You will be required to provide evidence satisfactory to the Registrar of having completed and remaining current in the advanced training required by Council. All members will be provided with further information regarding the process to be placed on the roster of dental hygienists authorized to perform this restricted activity as soon as the information is available.</td>
</tr>
<tr>
<td>DH Regulation</td>
<td>Clarification for CRDHA Members</td>
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<tr>
<td>(c) in collaboration with a dentist, to perform surgical or other invasive procedures on body tissue below the surface of teeth for the purpose of performing restoration procedures of a permanent nature.</td>
<td>Performance of restoration procedures of a permanent nature does not include cutting a cavity preparation. It does include placing, carving and finishing amalgam and composite restorations of a permanent nature after the cavity preparation has been cut by a dentist. Members are not automatically authorized to perform restorative procedures. Although a number of our members have completed restorative courses as part of their education in other jurisdictions, performance of restorative procedures was not previously included in the scope of practice of Alberta dental hygienists. Therefore, Council is currently in the process of reviewing restorative programs from across Canada in order to develop policies regarding approval of restorative courses, receipt of evidence of satisfactory completion of such courses, and evidence of currency in the provision of restorative procedures. Members will be required to provide evidence satisfactory to the Registrar of having completed and remaining current in the advanced training required by Council, prior to having their name placed on the CRDHA roster of members authorized to perform restorative procedures of a permanent nature. All members will be provided with further information regarding the authorization process as soon as the information is available.</td>
</tr>
<tr>
<td>14(1) Despite any authorization to perform restricted activities, regulated members must restrict themselves in performing restricted activities to those activities that they are competent to perform and to those that are appropriate to the member’s area of practice and the procedure being performed.</td>
<td>Section 14(1) is self explanatory.</td>
</tr>
<tr>
<td>(2) A regulated member who performs a restricted activity must do so in accordance with the standards of practice adopted by the Council under section 133 of the Act.</td>
<td></td>
</tr>
</tbody>
</table>
ACKNOWLEDGEMENTS

AUTHORS

Ann Eshenaur Spolarich, RDH, PhD  Ann Eshenaur Spolarich is an internationally recognized author and speaker on pharmacology and the care of medically complex patients. She has presented over 750 lectures and has over 60 professional publications. She is a faculty member at the Arizona School of Dentistry and Oral Health, the University of Southern California Dental School, and the University of Maryland Dental School. Ann is also an independent educational and research consult, and practices dental hygiene part-time.

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Critical Path:  www.critical-path.ca

Meridian Communications Inc.:  www.meridiancom.ca

DISCLAIMER

The information presented in this course is based upon current common prescribing practices used in dentistry and medicine. Variations and exceptions to these practices exist. Further, additional drug indications, contraindications, dosage regimens, adverse events, and drug interactions exist for all medications
discussed in this course. In order to ensure safe and effective therapy, the dental hygienist is strongly encouraged to investigate each medication in a reliable and current reference prior to prescribing, recommending, or administering a medication to a client.

We have done our best to produce an accurate, timely, and educational course. We have also done our best to accurately document trademarks (® and ™) for brand name drugs. However, the authors, reviewers, editors, consultants, and the provincial CRDHA office assume no responsibility for any errors or consequences arising from the use of information contained within this course. Due to legislative changes that can occur, it remains the responsibility of the learners as professionals to interpret and apply this information to their practice.

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PROVIDER INFORMATION

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Email: info@crdha.ca
Website: www.crdha.ca
COURSE COMPLETION

CONTINUING COMPETENCE PROGRAM CREDITS

The CRDHA’s Competence Committee has determined that registered dental hygienists who complete this course are eligible for 25 (twenty-five) continuing competence program credits.

In order for program credits to be applied for the course, each learner is required to submit the Request for Continuing Competence Program Credits form to CRDHA after successful completion of the course, including assignments and examination.

APPLYING FOR PRESCRIBER’S ID NUMBER

When you have completed all the assignments and the examination, you can apply for your prescriber’s ID number. Refer to the Examination Handbook for details.

QUESTIONS?

Contact the Pharmacy Course Administrator at pharmcourse@crdha.ca, (780) 465-1756, or toll-free at 1-877-465-1756.

We also welcome your feedback about this course.
### TABLE OF CONTENTS

**WELCOME** ........................................................................................................1

**ABOUT THIS COURSE** ..........................................................................................2
- COURSE OBJECTIVES ......................................................................................2
- COURSE SECTIONS ..........................................................................................3
  - Modules ........................................................................................................3
  - Tools ............................................................................................................4
  - Required Assignments ..................................................................................4
- COURSE FEATURES ..........................................................................................5
  - Icons ............................................................................................................5
  - Summary ........................................................................................................6
    - Did You Complete These Activities? ..........................................................6
    - Key Learning Points ..................................................................................6
  - Answer Key ..................................................................................................6
  - Appendices ..................................................................................................6

**HOW TO COMPLETE THIS COURSE** ................................................................6
- Order of Modules ..........................................................................................6
- Required Assignments ..................................................................................6
- Course Completion Checklist ........................................................................7

**EXAM** ............................................................................................................8
- Testing of Competencies ................................................................................8
- Item Presentation ............................................................................................9

**PLAGIARISM AND PROFESSIONAL INTEGRITY POLICY** .............................10
- Policy Statement ...........................................................................................10
- Plagiarism and Other Forms of Cheating .......................................................10
- Consequences ...............................................................................................11
- Course Administrator as a Resource .............................................................11

**RESOURCES AND REFERENCES** .....................................................................11
- GENERAL REFERENCES ................................................................................11
- SUGGESTED OR REQUIRED READINGS ...................................................11
- REQUIRED DRUG REFERENCES ...................................................................12
  - Bugs & Drugs Antimicrobial Pocket Reference 2006 ..................................12
  - CPS .............................................................................................................12
  - Oral Soft Tissue Disease Reference ..............................................................12
  - Drug Information Handbook, 14th Edition ..................................................12
- LEARNING RESOURCES ...............................................................................13
  - The College of Registered Dental Hygienists of Alberta (CRDHA) Standards of Practice ..........................13
  - Self Assessment Tool ................................................................................13
  - Provincial Legislation ................................................................................13
  - Federal/National Legislation, Standards, and Programs ................................13

**PRIVACY LEGISLATION** .....................................................................................14
- THE OFFICE OF THE INFORMATION AND PRIVACY COMMISSION ..........14
  - Freedom of Information and Protection of Privacy Act (FOIP) ..................14
  - The Health Information Act (HIA) .................................................................15
Personal Information and Privacy Act (PIPA) ........................................ 15
GLOSSARY ...................................................................................................... 16

LIST OF TABLES
Table 1: List of Modules ............................................................................ 3
Table 2: List of Tools ................................................................................... 4
Table 3: Which Modules Have Required Hand-In Assignments? ............... 4
Table 4: Examination Design ..................................................................... 9
Prescribing is another milestone in your professional career as a dental hygienist. As a professional, you have the skills and knowledge to manage your clients’ dental care. The ability to prescribe will allow you to continue this care with greater efficiency than before.

Using drug therapy, or more specifically issuing prescriptions, requires an understanding of the processes that contribute to drug use (such as pharmacology and human physiology) as well as acquisition of the essential competencies (knowledge, skills, attitudes, and judgments) that are required for safe and effective prescribing. This course is designed to help you, the dental hygienist, ensure that you have acquired the necessary skill sets prior to receiving your prescriber’s ID number.

The process of prescribing is to:

1. Assess the client’s condition and make a diagnosis
2. Assess the need for drug therapy, including consideration of non-pharmacological therapeutic alternatives and possible referral requirements
3. Establish therapeutic goals in collaboration with the client
4. Choose the preferred drug and appropriate dosage regimen for the individual based on client’s needs and values (obtain informed consent)
5. Issue a prescription
6. Establish the procedure (method) for drug therapy monitoring (including client follow-up as necessary)
Facilitating effective communication with the client or the client’s agent regarding drug therapy is ongoing throughout the process of prescribing. This communication includes providing information about common or serious potential adverse reactions (e.g., side effects, drug-drug interactions, drug-food interactions), management of adverse reactions (e.g., increased tooth staining, altered taste sensation, allergic reactions), and drug storage requirements.

As a learner of this course, your overall goal is to gain a solid, basic understanding about the elements of prescribing. You are not expected to memorize the details, such as the data presented in tables or lists; however, you are expected to know how and where to look up information when you need it. For example, you are not required to memorize all brand names or pharmacologic categories for a specific drug, such as epinephrine. However, the content of this course is based on the assumptions that you have successfully completed a dental hygiene undergraduate program and the CRDHA jurisprudence examination. It is also assumed that you have a working knowledge of all the legislation, standards of practice, and guidelines that direct the practice of dental hygiene in Alberta.

This course is an important part of enhancing your prescribing knowledge. It is designed to help you practice various skills, such as evaluating client situations, looking up drug information in handbooks, and determining the best course of action.

**ABOUT THIS COURSE**

**COURSE OBJECTIVES**

Following completion of this course, the dental hygienist will be able to:

- Describe the meaning of professional accountability and identify the mechanisms of effective collaboration and communication with clients and other health care professionals.
- Apply the *Dental Hygiene Process of Care* and use deductive reasoning to obtain and update a client’s complete comprehensive health history.
- Describe the basic principles of drug pharmacokinetics and pharmacodynamics.
- Research the mechanisms of actions, indications for use, potential actions, and contraindications of specific drugs, and use this information to make decisions about the care plan.
- Implement risk reduction strategies to increase client safety.
- Issue prescriptions that are accurate, clear, and complete by incorporating the principles of prescribing.
- Comply with drug storage, disposal, and labelling requirements to ensure safe handling of drugs and to protect clients and the environment.
COURSE SECTIONS

This course consists of seven modules, a tools section, and hand-in assignments.

Modules

<table>
<thead>
<tr>
<th>Module</th>
<th>Module Title</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Professional Accountability, Collaboration, and Communication</td>
<td>Describes the meaning of professional accountability and the mechanisms for effective collaboration and communication with other health professionals and with clients, including those with drug-seeking and drug-abuse behaviour. The College-specific Standards of Practice (CRDHA) are also referenced.</td>
</tr>
<tr>
<td>2</td>
<td>Decision Making Related to Medication Use</td>
<td>Details the Dental Hygiene Process of Care and documentation requirements. Eight fundamental questions, relevant to decision making and medication use, are incorporated into this Process of Care to guide you as you create a care plan for clients.</td>
</tr>
<tr>
<td>3</td>
<td>Principles of Pharmacology</td>
<td>Explains the routes of drug administration, drug pharmacokinetics, drug pharmacodynamics, and adverse drug reactions. Also discussed are therapeutic effect and index, and special prescribing considerations for pregnant and breastfeeding women, children, and older adults.</td>
</tr>
<tr>
<td>4</td>
<td>Drugs Used in Dental Hygiene</td>
<td>Describes the side effects associated with medication use, including both common systemic and common oral side effects. Lists many of the drugs used to help treat oral conditions and specifically highlights problems or risks with the drug, medications that cause the condition, signs, and treatment. Useful information that will enable the dental hygienist to make appropriate and safe decisions regarding medication use is incorporated. The major focus of this module is the drugs that dental hygienist prescribers will be authorized to prescribe.</td>
</tr>
<tr>
<td>5</td>
<td>Risk Management, Drug Errors, and Medical Emergencies</td>
<td>Describes how to assess risk for the client, for the dental hygienist, and within the practice environment. Risk management strategies are introduced to reduce the risk of adverse outcomes and include how to manage drug errors. The pharmacotherapeutics and pharmacokinetics of five drugs used to manage medical emergencies are examined.</td>
</tr>
<tr>
<td>6</td>
<td>Issuing a Prescription</td>
<td>Covers the principles of prescribing, the requirements for providing accurate and legal prescriptions, and the methods for preventing and reducing medication errors. Sample prescriptions are shown.</td>
</tr>
<tr>
<td>7</td>
<td>Storage, Disposal, and Labelling</td>
<td>Describes the storage and disposal requirements for prescription and non-prescription drugs, and outlines the labelling requirements for in-office services and for use at home.</td>
</tr>
</tbody>
</table>
**Tools**

Tools include forms that help you record information and monitor the health of your clients. The tools are available in the Tools tab of this course. Tools developed by CRDHA can also be found online at www.crdha.ca.

**Table 2: List of Tools**

<table>
<thead>
<tr>
<th>Tool</th>
<th>Introduced in Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Hygiene Process of Care: Fundamental Questions</td>
<td>2</td>
</tr>
<tr>
<td>Health History Questionnaire</td>
<td>2</td>
</tr>
<tr>
<td>Health History Updates</td>
<td>2</td>
</tr>
<tr>
<td>Drug Error Report</td>
<td>5</td>
</tr>
<tr>
<td>Canada Vigilance Reporting Form (Health Canada)*</td>
<td>5</td>
</tr>
<tr>
<td>Prescription Fax</td>
<td>6</td>
</tr>
</tbody>
</table>


The Tools tab also includes all course references.

**Required Assignments**

In the back of Modules 1, 3, 4, 5, and 6, there is a section called “Required Assignments for Course Completion.” Modules 2 and 7 do not have any hand-in assignments.

**Table 3: Which Modules Have Required Hand-In Assignments?**

<table>
<thead>
<tr>
<th>Module</th>
<th>Module Title</th>
<th>Required Hand-In Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Professional Accountability, Collaboration, and Communication</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Decision Making Related to Medication Use</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Principles of Pharmacology</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Drugs Used in Dental Hygiene</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Risk Management, Drug Errors, and Medical Emergencies</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Issuing a Prescription</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>Storage, Disposal, and Labelling</td>
<td>No</td>
</tr>
</tbody>
</table>
You must complete, send in, and pass all assignments before you can write the exam. The assignments are designed to help you integrate the information that you have learned in the modules. You are expected to work on the assignments individually.

Each assignment will be marked and returned to you in a timely manner. You will receive an earned mark and any necessary feedback. If a pass mark is not received on the original assignment, you must complete an alternate assignment that covers the same material. Prior to submitting the alternate assignment, you are strongly encouraged to participate in one of the regularly scheduled sessions with the resource people.

If you are unsuccessful in completing an assignment a second time, you may be directed to obtain further education (e.g., undergraduate course in the basics of pharmacology) prior to being allowed to continue with the course.

**COURSE FEATURES**

Each module contains features to support your learning process.

**Icons**

Woven throughout the modules are simple to complex cases, practice tips, and highlights about your role in incorporating the relevant CRDHA standards of practice, provincial or federal legislation, and concepts into your practice. We encourage you to make this course an active learning experience.

**Scenarios**

Provide real-life situations in which to apply your knowledge and judgment. The answers to the scenario questions are provided at the back of each module. Scenarios often use “personas” to bring life to the situations.

**Practice Tips**

Help you apply the knowledge or skills in your practice setting.

**Pause & Reflect**

Are questions for you to ponder. Consider how you might integrate the information in your practice. We invite you to take the time to reflect and jot down some thoughts or notes in the margin.

**Did You Know?**

Draws attention to important facts.
Summary
The Summary section, at the back of each module, recaps the activities you completed.

Did You Complete These Activities?
Use the items listed as a checklist to ensure that you have completed all questions in the scenarios, pause & reflect considerations, and required assignments.

Key Learning Points
Use the key learning points to review that you have a solid understanding of the content presented in the module.

Answer Key
The Answer Key provides the answers to scenario questions. Most scenarios require that you determine an answer based on the scenario information; however, a few scenarios are “read only.”

To ensure the best learning possible, do not look at the answers before attempting the questions yourself. Use the scenarios as little quizzes to apply your knowledge and then use the Answer Key only to confirm or clarify your understanding of the concepts presented in the module.

Appendices
Some modules include appendices as additional reference material.

HOW TO COMPLETE THIS COURSE

Order of Modules
The recommended approach to completing this course is to work through each module sequentially. Start with Module 1 and work your way to Module 7. Skipping modules is not recommended because the content presented assumes that you’ve completed previous modules. However, because the content in the modules is so closely integrated, some modules suggest you review an appendix or section in another module.

Required Assignments
Use the pages at the end of the modules as your working copy. When you are satisfied with your answers, complete the hand-in copies of the required assignments that are located in the Assignments tab. Make sure you’ve written your CRDHA ID number in the box on each assignment page.

The recommended approach is to complete and send the module’s required assignment to CRDHA as you go. After you have read and studied the module, complete the assignment for that module and mail it to CRDHA. There is no need to wait and send all assignments together. Sending assignments as you
complete modules will allow CRDHA to provide ongoing feedback — a more effective method of learning rather than receiving feedback only once at the end of the course.

When you’ve completed the hand-in copy of a required assignment, mail it to:

**CRDHA**
c/o Pharmacy Course Administrator
#206, 8657 – 51 Avenue NW
Edmonton, AB T6E 6A8

**Course Completion Checklist**
Use this section to track your progress of the course.

- Complete reading this Overview module
- Complete study of Module 1:
  - Complete module content
  - Review Summary including *Did You Complete These Activities? and Key Learning Points*
  - Complete Module 1 required assignment
  - Submit Module 1 required assignment to CRDHA
  - Module 1 required assignment returned
- Complete study of Module 2:
  - Complete module content
  - Review Summary including *Did You Complete These Activities? and Key Learning Points*
- Complete study of Module 3:
  - Complete self assessment
  - Review suggested content based on your self assessment score
  - Complete module content
  - Review Summary including *Did You Complete These Activities? and Key Learning Points*
  - Complete Module 3 required assignment
  - Submit Module 3 required assignment to CRDHA
  - Module 3 required assignment returned
- Complete study of Module 4:
  - Complete module content
  - Review Summary including *Did You Complete These Activities? and Key Learning Points*
  - Complete Module 4 required assignment
  - Submit Module 4 required assignment to CRDHA
  - Module 4 required assignment returned

If you have any questions about the learning activities or require clarification about a concept, it will help to participate in one of the regularly scheduled times with an expert. Email your question to the Pharmacy Course Administrator before the scheduled session.
Complete study of Module 5:

- Complete module content
- Review Summary including *Did You Complete These Activities?* and *Key Learning Points*
- Complete Module 5 required assignment
- Submit Module 5 required assignment to CRDHA
- Module 5 required assignment returned

Complete study of Module 6:

- Complete module content
- Review Summary including *Did You Complete These Activities?* and *Key Learning Points*
- Complete Module 6 required assignment
- Submit Module 6 required assignment to CRDHA
- Module 6 required assignment returned

Complete study of Module 7:

- Complete module content
- Review Summary including *Did You Complete These Activities?* and *Key Learning Points*

**EXAM**

You will be provided with detailed information in the Examination Handbook, which will be sent to you once you’ve completed the first two assignments.

The Course Administrator will also tell you what personal identification is required before taking the exam. You will also be reminded that you may only bring pencils with you for the purpose of the examination. Resources needed for the examination (e.g., Drug Information Handbook, CPS) will be sent directly to your examination site by the Course Administrator.

Certification examinations have a well-defined purpose: to protect the public by ensuring that individuals who are certified possess sufficient knowledge and skills to safely and effectively perform the necessary competencies. The purpose of the CRDHA Prescriber’s Examination is to determine whether or not an individual registered in the CRDHA Pharmacy Course is prepared to safely and effectively prescribe the Schedule 1 drugs identified in the *Dental Hygienists Profession Regulation* under the Health Professions Act.

**Testing of Competencies**

All competencies in the Alberta-specific dental hygiene competency profile are inherent in a dental hygienist’s practice. For testing purposes, selected competencies have been chosen from the Alberta-specific dental hygiene competency profile because they are reflective of the learning objectives the CRDHA Pharmacy Course.
All the competencies to be tested focus on the knowledge, skills, attitudes, and judgments that are necessary to safely, competently, and ethically prescribe the Schedule 1 drugs to clients. For example, consider the competency which states:

“The dental hygienist assesses practice environment for safety risks (i.e. for clients, the dental hygienist and others).”

Although all registered dental hygienists are expected to assess the practice environment for all safety risks, such as appropriate infection control, testing will focus on safety risks relevant to prescribing. The examination questions will focus on the individual’s knowledge/abilities to assess the practice environment for safety risks specific to the drugs used in dental hygiene practice (e.g., proper storage, labelling, and in-office use of the drugs).

**Item Presentation**

Test questions will be presented in one of two formats: case-based or independent items. Scenario or case-based items are a set of approximately five objective examination items associated with a brief health care scenario using a template format.

For the 80–90 items on the examination, 40–60% will be presented as independent items and 40–60% will be presented within cases or scenarios.

You will be tested on three levels: knowledge, application, and critical thinking.

<table>
<thead>
<tr>
<th>Table 4: Examination Design</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structural Variables</strong></td>
</tr>
<tr>
<td>Examination Length and Format</td>
</tr>
<tr>
<td>Cognitive Ability Levels</td>
</tr>
<tr>
<td>Application: 45–56% of items</td>
</tr>
<tr>
<td>Critical Thinking: 20–30% of items</td>
</tr>
<tr>
<td>CRDHA Competency Categories (Based on Dental Hygiene Process of Care Model)</td>
</tr>
<tr>
<td>Implementation Evaluation</td>
</tr>
<tr>
<td>Learning Objectives</td>
</tr>
</tbody>
</table>
PLAGIARISM AND PROFESSIONAL INTEGRITY POLICY

Policy Statement

Plagiarism and other forms of cheating may be considered unprofessional conduct. The CRDHA expects all members to be evaluated on their own merit and further expects all members, including those taking the Elements of Prescribing: A Pharmacy Refresher Course for Dental Hygienists (the “Refresher Course”), to act with integrity and honesty. The CRDHA’s Code of Ethics and Practice Standards are two of the documents designed to guide your professional behaviour as a dental hygienist in Alberta.

In addition, this policy is intended to set out the CRDHA’s expectations and requirements for honesty and professional integrity generally, and particularly as it relates to cheating and to the Refresher Course. This policy has been developed for the protection of our members and the public, and for the protection of the integrity of our profession.

The Refresher Course is designed to ensure that you have the competencies necessary to safely and effectively issue prescriptions to clients. It is your professional responsibility to learn the Refresher Course information and apply it accordingly. It is also your responsibility to know and avoid all forms and levels of cheating and plagiarism. Ignorance of the rules does not excuse cheating or plagiarism.

Plagiarism and Other Forms of Cheating

Plagiarism includes the use of another’s words, ideas, or work without stating the material originated from a source other than you. Giving adequate credit to another’s work requires a clear indication of the act of borrowing (such as quotation marks and indentation) and proper attribution (documentation of source consistent with a recognized citation style guide such as Vancouver Style or APA Style). Plagiarism may range from sloppy research or writing to direct copying. Cheating also includes allowing someone to use your work as his or her own. All levels of plagiarism are considered cheating and will fall within this policy.

The following are only examples of conduct that will be considered by the CRDHA as cheating:

- Using unauthorized aids on the exam (e.g., “cheat sheets,” cell phones, etc.)
- Representing someone else’s work or words as your own
- Submitting someone else’s work as your own
- Looking at someone else’s answers during the exam
- Having someone else impersonate you at the examination or impersonating another person at the examination
- Making up sources or facts for an essay or report
• Providing or selling your work to be used by another

*It is not possible to cover every circumstance of dishonesty or plagiarism; therefore, this list contains examples only. It is not a comprehensive list.*

**Consequences**

When a member is found cheating, plagiarizing, or engaging in similar conduct, the CRDHA will consider the member’s conduct a breach of this policy, which may also be considered unprofessional conduct on the part of that member.

Possible consequences for cheating, including plagiarism, include:

• A reduction in the earned mark for an assignment
• Mandatory completion of an alternate assignment that covers the same subject material
• An allocation of “0” (zero) on an assignment or examination
• Participant’s removal from the rest of the Refresher Course
• Temporary or indefinite suspension from acceptance for future Refresher Courses
• Reference of the matter to the Complaints Director to be investigated or dealt with as a complaint under the Health Professions Act

**Course Administrator as a Resource**

As a dental hygienist participating in this course, it is your responsibility to ensure the integrity of the hand-in assignments or writing of the examination, and to understand what constitutes cheating or plagiarism. If you have any concerns regarding honest conduct by any member, ask the Course Administrator. The Course Administrator can help you determine what would constitute honest conduct, what constitutes plagiarism, or how to use secondary sources appropriately.

**RESOURCES AND REFERENCES**

You can access PDF files and links to website readings and resources from the course’s online resources. Use the website address (URL), user name, and password provided to you.

**GENERAL REFERENCES**

A list of references for each module is located in the Tools tab.

**SUGGESTED OR REQUIRED READINGS**

Each module lists suggested or required readings that pertain to the module’s content.
REQUIRED DRUG REFERENCES

**Bugs & Drugs Antimicrobial Pocket Reference 2006**


This is a comprehensive, evidence-based reference with local recommendations for the appropriate use of antibiotics and the optimal treatment and prevention of infectious diseases. Recommendations in the book are based on the writers’ knowledge of infectious diseases, microbiology, and pharmacotherapy; an extensive review of the literature; consultation with multiple specialists; local antibiotic formularies; and local susceptibility patterns.

You may use the Capital Health Region Edition or the General Edition. The Capital Health Region Edition contains data that is specific to an area; the General Edition contains provincial data.

A complimentary Bugs & Drugs 2006 book was sent to each dentist in 2006.

**CPS**


A hard-copy or online version (eCPS) is available.

Print and online versions both have Product Identification sections for visual identification of drugs.

**Oral Soft Tissue Disease Reference**


This reference book is designed to help you in the diagnosis and management of clients with oral soft tissue diseases.

**Drug Information Handbook, 14th Edition**


A hard-copy, CD-ROM, or online version is available.

Information from and reference to this handbook as been used extensively throughout the course. Within the course, this handbook is referred to the Drug Information Handbook.

The print version of this book does not have the Lexi-Drug ID for visually identifying the drugs; however, the CD-ROM and online versions do contain the Lexi-Drug IDs.
LEARNING RESOURCES

The following learning resources are essential to complete the course and are incorporated into all modules of this course. CRDHA documents can be found on CRDHA’s website: www.crdha.ca > CRDHA Members > Registrants’ Handbook.

The College of Registered Dental Hygienists of Alberta (CRDHA) Standards of Practice

CRDHA Practice Standards

CRDHA Code of Ethics

CRDHA Practice Guidelines Regarding Prescription and Non-Prescription Drugs in Dental Hygiene Practice (considered a Standard of Practice)

Self Assessment Tool

Tab 2 of the CRDHA Self Assessment Package

Provincial Legislation

Health Professions Act

Dental Hygienists Profession Regulation

ACP’s Standards for Pharmacist Practice and Standards for Operating Licensed Pharmacies (also summarized in appendix of CRDHA Guidelines Regarding Prescription and Non-Prescription Drugs in Dental Hygiene Practice)

Federal/National Legislation, Standards, and Programs

Health Canada’s Canada Vigilance (Canadian Adverse Drug Reaction Monitoring Program) Guidelines (also summarized in appendix of CRDHA Guidelines Regarding Prescription and Non-Prescription Drugs in Dental Hygiene Practice)

Health Canada’s Labelling Standards (also summarized in appendix of CRDHA Guidelines Regarding Prescription and Non-Prescription Drugs in Dental Hygiene Practice)

Canada’s Food and Drugs Act
PRIVACY LEGISLATION

THE OFFICE OF THE INFORMATION AND PRIVACY COMMISSION

The Office of the Information and Privacy Commissioner (OIPC) of Alberta provides essential information pertaining to the provincial Freedom of Information and Protection of Privacy (FOIP) Act, the Health Information Act (HIA), the Personal Information Protection Act (PIPA), the Access to Motor Vehicle Information Regulation (AMVIR), and the Office of the Information and Privacy Commissioner (OIPC).

The OIPC was created in 1995 to assist the Commissioner to fulfill the mandate under the Freedom of Information and Protection of Privacy Act (FOIP Act). In 2001, the Commissioner’s jurisdiction expanded to include regulatory responsibilities for the Health Information Act (HIA). In January 2004, the Commissioner was given oversight responsibilities for the Personal Information Protection Act (PIPA).

The OIPC has produced a number of brochures dealing with protection of privacy and access to information issues. Specific publications have also been developed about the role of the OIPC, the FOIP Act, HIA, and PIPA. For detailed information about the privacy acts, which apply to your practice of dental hygiene, you should visit the OIPC of Alberta website at http://www.oipc.ab.ca/about/office.cfm. PDF versions of all OIPC publications are available on this site.

It is up to you to learn more about how each Act applies to your practice setting. Following is a brief summary of each of the Acts:

- Freedom of Information and Protection of Privacy Act (FOIP Act)
- Health Information Act (HIA)
- Personal Information and Privacy Act (PIPA)

**Freedom of Information and Protection of Privacy Act (FOIP)**

The Freedom of Information and Protection of Privacy Act (the FOIP Act) was passed by the Alberta Legislature in June 1994. It came into effect on October 1, 1995.

The FOIP Act provides individuals with the right to request access to information in the custody or control of public bodies while providing public bodies with a framework within which they must conduct the collection, use, and disclosure of personal information. Public bodies are defined in section 1(1)(p) of the FOIP Act and include:

- a department, branch, or office of the government of Alberta
- an agency, board, commission, corporation, office, or other body designated as a public body in the regulations of the Act
• educational bodies (universities, technical institutes, colleges, school boards, and charter schools)
• health care bodies (Regional Health Authorities, provincial health boards, nursing home operators, hospital boards, and subsidiary health corporations)
• local government bodies (municipalities, Metis settlements, police services and commissions, libraries, etc)

The Health Information Act (HIA)
The Health Information Act (HIA) was passed by the Alberta Legislature in 1999 and came into effect on April 25, 2001.

The HIA provides individuals with the right to request access to health records in the custody or under the control of custodians, while providing custodians with a framework within which they must conduct the collection, use, and disclosure of health information. Custodians are defined in section 1(1)(f) of the HIA and include:

• The Minister and Department of Alberta Health and Wellness
• Any health service provider paid in part or in whole by the Alberta Health Care Insurance Plan
• Pharmacies and pharmacists regardless of how they are paid
• Regional Health Authorities and provincial health boards (Alberta Cancer Board and Alberta Mental Health Board)
• Nursing home operators

In addition to regulating information access, collection, use, and disclosure practices of custodians, the HIA also covers the actions of affiliates. Affiliates include employees, volunteers, contractors, and agencies under contract to the custodian. Some examples of affiliates can include reception and nursing staff at a doctor’s office, pharmacy technicians, or information desk and food service workers in a hospital.

Ultimately, custodians are responsible for the information collected, used, and disclosed by their affiliates.

Personal Information and Privacy Act (PIPA)
The Personal Information Protection Act (PIPA) came into force in January 2004.

The purpose of PIPA is to govern the means by which private sector organizations handle personal information in a manner that recognizes both the right of an individual to have his or her personal information protected and the need of organizations to collect, use, or disclose personal information for purposes that are reasonable.
PIPA provides individuals the opportunity to request access to their own personal information, and includes provisions regarding the correction and care of personal information by organizations. PIPA also applies to personal employee information.

Some examples of the organizations to which PIPA applies include:

- non-profit organizations
- trade unions
- private schools
- partnerships
- corporations
- unincorporated associations
- professional regulatory associations
- any individual acting in a commercial capacity
- any individual acting on behalf of a corporation, unincorporated association, trade union, or partnership

GLOSSARY

The following terms are used throughout the course. Review the definitions and refer to them as needed as you proceed through the modules that further expand on these concepts.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>absorption</td>
<td>The rate at which a drug leaves the site of administration and enters the circulation, and the extent to which this occurs.</td>
</tr>
</tbody>
</table>
| activities of daily living | Section 7.1 ([Health Services Restricted Activities](#)) of the Government Organization Act defines “activities of daily living” as activities that “individuals normally perform on their own behalf to maintain their health and well-being, and includes

(i) routine and invasive self-care activities, including but not restricted to the removal of slivers and the cleaning of wounds, and

(ii) specifically taught procedures, which generally result in predictable and stable responses, including but not restricted to catheterization, maintenance of drainage tubes and administration of drugs by injection;”

These self-care abilities (such as bathing, oral hygiene, feeding, and daily insulin injections) are fundamental to independent living. Assistive devices (aids to daily living, such as a walker or cane, or toothbrush with a modified grip) may be provided to help an individual perform these activities independently. |
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>additive drug effect</td>
<td>A drug effect that occurs when two drugs (that cause the same effect) are given together and produce an effect that is equal in magnitude to the sum of the effects when the two drugs are given individually.</td>
</tr>
<tr>
<td>adverse drug reaction</td>
<td>See adverse effect.</td>
</tr>
<tr>
<td>adverse effect</td>
<td>The undesirable or unexpected action of a drug.</td>
</tr>
<tr>
<td>ageusia</td>
<td>Total loss of the ability to taste.</td>
</tr>
<tr>
<td>agonist drugs</td>
<td>Drugs that promote intrinsic activity, meaning that they produce similar effects of endogenous (naturally occurring) hormones, neurotransmitters, and other substances when they interact with receptors.</td>
</tr>
<tr>
<td>angioedema</td>
<td>A swelling similar to urticaria (hives), but the swelling is beneath the skin. Angioedema is classified as allergic, hereditary, or idiopathic.</td>
</tr>
<tr>
<td>antagonist drugs</td>
<td>Also known as “blocker” drugs. Drugs that inhibit cell function by occupying receptor sites. An antagonist drug binds to the same receptor as an agonist, but is unable to activate the receptor to produce an effect. This prevents endogenous substances or other drugs from occupying the receptor sites and activating cell functions.</td>
</tr>
<tr>
<td>anticholinergic drug</td>
<td>A drug that opposes or blocks the action of acetylcholine. Anticholinergic drugs reduce the volume of serous saliva.</td>
</tr>
<tr>
<td>aphthous stomatitis</td>
<td>A condition characterized by the formation of painful, round, cratered ulcerations with a regular border and a red halo around the margins; a white pseudomembrane covers the center of the lesions. Also called recurrent aphthous stomatitis, aphthous ulcers, and canker sores.</td>
</tr>
<tr>
<td>bioavailability</td>
<td>Refers to the rate and extent that an orally administered drug reaches the systemic circulation and is therefore available to act on body cells.</td>
</tr>
<tr>
<td>biotransformation</td>
<td>The process of chemical alteration of drugs in the body; also known as drug metabolism.</td>
</tr>
<tr>
<td>blood dyscrasias</td>
<td>Alterations in the number and function of the formed elements of the blood.</td>
</tr>
<tr>
<td>candidiasis</td>
<td>An opportunistic fungal infection caused by the overgrowth of the organism <em>Candida albicans</em>.</td>
</tr>
<tr>
<td>cholinergic agonist</td>
<td>A drug that produces parasympathetic stimulation of the exocrine glands, increasing the secretion of serous saliva.</td>
</tr>
<tr>
<td>clearance rate</td>
<td>The time needed to eliminate a drug from the body.</td>
</tr>
<tr>
<td>client</td>
<td>An individual, family, group, institution, community, or population.</td>
</tr>
<tr>
<td>collection (of information)</td>
<td>Gathering, acquiring, recording, photographing, or obtaining personal information from any source, and by any means.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>competitive antagonist drug</strong></td>
<td>A drug that has the same binding affinity for a receptor as an agonist drug, but once bound, produces no effect.</td>
</tr>
<tr>
<td><strong>controlled substance</strong></td>
<td>Distribution, prescription, and destruction of controlled and narcotic drugs are regulated through federal legislation, including the Controlled Drugs and Substances Act, the Narcotic Control Regulations, and the Benzodiazepines and Other Targeted Substances Regulations. A controlled substance is defined as “A substance that is included in Schedule I, II, III, IV or V” of the Controlled Drugs and Substances Act (federal) and includes narcotic and controlled drugs. Further legislation surrounding the issuance of a prescription and distribution of these controlled substances is found in the federal Food and Drugs Act (Part G: Controlled Drugs). In Canada, the definition of “practitioner” for the purposes of the Controlled Drugs and Substances Act is described in the Controlled Drugs and Substances Act. In 1986, the Council of the College of Physicians and Surgeons of Alberta (CPSA) established the Triplicate Prescription Program (TPP) in partnership with pharmacists and dentists to monitor the use of certain drugs prone to misuse and abuse for non-medical purposes. The list of medications on the TPP is provided by CPSA. To prescribe medications on the TPP, it is mandatory that prescribers use the special TPP prescription forms. At this time in Alberta, only veterinarians, physicians and dentists can apply to participate in the TPP. Note: The continued operation of the TPP is dependent on government funding.</td>
</tr>
<tr>
<td><strong>CRDHA prescriber’s ID number</strong></td>
<td>An identification number issued to a CRDHA member (on the General Register) that authorizes the member to issue prescriptions for the drugs listed in the Dental Hygienists Profession Regulation. This number must be used by the Dental Hygienist Prescriber each time a prescription is issued. Regulated members of the Alberta College of Pharmacists (ACP) will access a list of authorized dental hygienist prescribers through ACP’s website.</td>
</tr>
<tr>
<td><strong>cross-tolerance</strong></td>
<td>A condition in which tolerance for one drug in a given class of drugs produces tolerance to all other drugs within the same class.</td>
</tr>
<tr>
<td><strong>disclosure (of information)</strong></td>
<td>Showing, telling, sending, or giving personal information to some other individual or organization, or to the public. This does not include use of the information within the practice environment.</td>
</tr>
<tr>
<td><strong>distribution</strong></td>
<td>The process of moving the drug to different sites in the body, including its target site. Drug distribution determines how rapidly a drug will produce its desired effect, the duration of the effect, or whether an effect will occur at all.</td>
</tr>
<tr>
<td><strong>dosage regimen</strong></td>
<td>Strength, duration, and frequency of drug use.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>dose-response relationship</td>
<td>The relationship between the dose of the administered drug and the degree of the response that is produced by the drug.</td>
</tr>
<tr>
<td>drug</td>
<td>In the broadest sense, a drug is defined as any chemical or biological substance (other than food), synthetic or non-synthetic, that when taken into the body, produces an effect or alters a bodily function such as prevention of a disease, relief of symptoms, or curing a disease. “Drug” is further defined in Module 1.</td>
</tr>
<tr>
<td>drug discrepancy</td>
<td>An event that does not include the actual administration or use of a drug by the client, but an error in the process that has been detected and corrected before the drug has been ingested or administered to the client. Also referred to as a close call or near miss.</td>
</tr>
<tr>
<td>drug error</td>
<td>See medication error.</td>
</tr>
<tr>
<td>drug incident</td>
<td>An event that involves the ingestion or incorrect use of and incorrect drug/dosage regimen by the client.</td>
</tr>
<tr>
<td>drug profile (pharmacologic history review)</td>
<td>A component of the client’s comprehensive health history that is conducted for each client prior to initiating dental hygiene care. The client’s drug profile, which is used to develop a care plan, aids the registered dental hygienist in determining possible contraindications and adverse effects, such as drug-drug and drug-food interactions. The drug profile includes:</td>
</tr>
<tr>
<td></td>
<td>• A comprehensive list of drugs (prescription and non-prescription) that the client is currently taking, or has taken, since the last update of the client’s health history. When determining non-prescription drugs for the client’s health history, the drug profile must include any drugs listed in Schedules 2 and 3 of Alberta’s Drug Schedules, unscheduled drugs, as well as alcohol, tobacco, and natural health products not encompassed in the provincial drug schedules.</td>
</tr>
<tr>
<td></td>
<td>• Adverse drug reactions (e.g., any known allergies or sensitivities that the client has to any drugs).</td>
</tr>
<tr>
<td></td>
<td>• Client compliance.</td>
</tr>
<tr>
<td></td>
<td>• The dental hygienist’s interpretation about how the client’s medications are affecting the client’s systemic health and the health of the oral cavity.</td>
</tr>
<tr>
<td>drug-drug interaction</td>
<td>The influence of one medication on another, resulting in alteration of the effects of one or both medications.</td>
</tr>
<tr>
<td>dysgeusia</td>
<td>A distortion in the perception of the correct taste.</td>
</tr>
<tr>
<td>ED$_{50}$</td>
<td>The minimum dose that is effective for 50% of the human population.</td>
</tr>
<tr>
<td>efficacy</td>
<td>The maximum effect or response produced by a drug.</td>
</tr>
<tr>
<td>elderly</td>
<td>See older adults.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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</tr>
<tr>
<td>elimination rate constant</td>
<td>A unit of measurement that assesses the fraction of a drug in the plasma that is eliminated from the body per unit of time.</td>
</tr>
<tr>
<td>enteral</td>
<td>Routes of drug administration that place drugs directly into the gastrointestinal tract.</td>
</tr>
<tr>
<td>erythema multiforme (EM)</td>
<td>Acute, self-limiting skin eruptions, primarily located on the extremities. A hypersensitivity reaction is the suspected etiological factor in EM. Erythema multiforme minor is a mild cutaneous form of the disorder, and erythema multiforme major is a severe mucocutaneous form of the disorder; both may occur in the oral cavity (25–60% of cases involve the oral mucosa).</td>
</tr>
<tr>
<td>excretion</td>
<td>The process by which a drug or its metabolite is eliminated from the body.</td>
</tr>
<tr>
<td>first-order kinetics</td>
<td>The exponential elimination of drugs from the body. Also see zero-order kinetics, the opposing term.</td>
</tr>
<tr>
<td>first-pass effect</td>
<td>Drug metabolism that occurs when oral medications first travel through the hepatic portal circulation before reaching their target sites of action. Drugs with a high first-pass effect must be given in a larger dose compared with the same drug given by parenteral administration.</td>
</tr>
<tr>
<td>hairy tongue</td>
<td>A benign condition that results from elongation, hyperkeratinization, and retardation of the normal rate of desquamation of the filiform papillae.</td>
</tr>
<tr>
<td>half-life</td>
<td>The amount of time required for the plasma drug concentration to decrease by 50%. The notation for half-life is $t_{1/2}$.</td>
</tr>
<tr>
<td>health history</td>
<td>A complete and thorough legal document that contains information about the client’s past and present medical and dental conditions, risk factors for disease, a drug profile, undiagnosed conditions, and allergies or sensitivities. The health history should also include information about the client’s lifestyle; cultural practices related to health and disease, past and present emotional problems, and general state of mind. This written report is obtained from the health history questionnaire, a verbal interview, and direct client observation.</td>
</tr>
<tr>
<td>health history questionnaire</td>
<td>The health history questionnaire is a legal document that the client completes during the initial dental hygiene visit. The questionnaire is used to obtain further information regarding the client’s physical and oral health status, the drug profile (pharmacologic history), determinants of health, and risk factors.</td>
</tr>
<tr>
<td>histopathology</td>
<td>The study of pathology of cells and tissues; the microscopic changes characteristic of disease.</td>
</tr>
<tr>
<td>host modulation therapy</td>
<td>The use of medications to prevent and treat periodontal disease. The therapy decreases the client’s susceptibility to periodontal destruction caused by inflammation and the immune response.</td>
</tr>
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<td>Term</td>
<td>Definition</td>
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</tr>
<tr>
<td>hypersensitivity</td>
<td>Immunologic response to a drug that is not predictable and not dose related; also known as <em>drug allergy</em>.</td>
</tr>
<tr>
<td>hypogeusia</td>
<td>A decreased sensitivity in taste.</td>
</tr>
<tr>
<td>idiosyncratic reaction</td>
<td>An unusual response to a drug that differs qualitatively from its usual, expected response.</td>
</tr>
<tr>
<td>induction reaction</td>
<td>A drug reaction that occurs when the amount of microsomal liver enzymes increases, resulting in increased drug metabolism, and a reduced drug effect.</td>
</tr>
<tr>
<td>inhibition reaction</td>
<td>A drug reaction that occurs when the drug inhibits liver enzymes, which slows or reduces the rate of drug metabolism. This results in increased blood levels of the drug and its related effects.</td>
</tr>
<tr>
<td>LD₅₀</td>
<td>The minimum dose that is lethal or toxic for 50% of the human population.</td>
</tr>
<tr>
<td>lichenoid drug eruption (LDE) reaction</td>
<td>A delayed hypersensitivity reaction that results in the appearance of oral lesions that resemble lichen planus (both clinically and histologically). The main difference is that LDE usually resolves when use of the offending drug is stopped.</td>
</tr>
<tr>
<td>medication error</td>
<td>Any preventable event that may cause or lead to inappropriate medication use or client harm while the medication is in the control of the health care professional, client, or consumer. Such events may be related to professional practice, health care products, procedures, and systems, including prescribing; ordering communication; product labelling, packaging, and nomenclature; compounding; dispensing; distribution; administration; education; monitoring; and use.</td>
</tr>
<tr>
<td>near miss</td>
<td>Also referred to as a close call. See <em>drug discrepancy</em>.</td>
</tr>
<tr>
<td>NHP</td>
<td>Acronym for natural health product.</td>
</tr>
<tr>
<td>noncompetitive antagonist drug</td>
<td>A drug that binds irreversibly to either the same or different receptor sites that bind agonist drugs, and once bound, diminishes or inhibits the maximum effect produced by an agonist drug.</td>
</tr>
<tr>
<td>off-label</td>
<td>Prescribing approved medications for other than their intended approved indication.</td>
</tr>
<tr>
<td>older adults</td>
<td>Adults aged 65 years or older. Many terms are used to define this population group (e.g., elderly, seniors, senior citizen). For the purpose of this course, the term older adults is used.</td>
</tr>
<tr>
<td>parenteral</td>
<td>Routes of drug administration that enter the body in a way other than the GI tract, bypassing the gastrointestinal tract.</td>
</tr>
<tr>
<td>pathophysiology</td>
<td>Involves the study of functional or physiological changes that result from disease processes. Pathophysiology focuses on the effects of a disease at the organ level but cellular changes are usually integral to a full understanding of these effects.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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<tr>
<td>pharmacodynamics</td>
<td>The study of the biochemical and physiological effects that drugs produce on various body systems, including their mechanisms of action. What the drug does to the body.</td>
</tr>
<tr>
<td>pharmacogenetics</td>
<td>The use of genetic testing to determine if genetic variations influence how a drug works within an individual.</td>
</tr>
<tr>
<td>pharmacokinetics</td>
<td>How drugs are handled by the body, specifically drug absorption, distribution, metabolism, and elimination. What the body does to the drug.</td>
</tr>
<tr>
<td>pharmacologic history review</td>
<td>See drug profile.</td>
</tr>
<tr>
<td>pharmacology</td>
<td>The study of the biochemical and physiologic effects of drugs.</td>
</tr>
<tr>
<td>pharmacotherapeutics</td>
<td>Applied or clinical pharmacology that is concerned with the use of drugs in the prevention and treatment of disease.</td>
</tr>
<tr>
<td>potency</td>
<td>The amount of drug needed to produce a desired effect. It is a comparative measure that refers to the different doses of two drugs that are needed to produce the same effect. The drug that requires a lower dosage is said to be more potent.</td>
</tr>
<tr>
<td>potentiation</td>
<td>A drug effect that occurs if a drug lacking an effect of its own increases the effect of a second, active drug.</td>
</tr>
<tr>
<td>prescribe</td>
<td>A verbal or written direction or order to provide the client with a stated amount of a specified drug. Prescribing includes the choice of drug, dosage form, and drug regimen (drug strength, dosing frequency and duration).</td>
</tr>
<tr>
<td>prescriber's ID number</td>
<td>See CRDHA prescriber’s ID number.</td>
</tr>
<tr>
<td>pro-drug</td>
<td>An inactive parent drug that requires activation by the liver via metabolism.</td>
</tr>
<tr>
<td>side effects</td>
<td>Predictable, dose-related responses that occur within therapeutic dose ranges and that are undesirable in a given therapeutic situation. Side effects are related to the drug’s known pharmacologic activity. Drugs can produce side effects on the target tissue or a non-target tissue.</td>
</tr>
<tr>
<td>steady-state concentration</td>
<td>A plateau that occurs following the exponential accumulation of total body stores of a drug.</td>
</tr>
<tr>
<td>structure-activity relationship</td>
<td>The relationship between the chemical structure of a drug molecule and the biologic activity that it produces.</td>
</tr>
<tr>
<td>sympathomimetic drug</td>
<td>A drug that mimics the action of stimulation by the sympathetic nerves, producing a more viscous, mucinous saliva.</td>
</tr>
<tr>
<td>synergistic drug effects</td>
<td>Drug effects that occur when two drugs (that cause the same effect) are given together produce an effect that is greater in magnitude than the sum of the effects when the drugs are given individually.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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<tr>
<td>tachyphylaxis</td>
<td>The rapid development of tolerance, which occurs with repeated dosing, often within hours.</td>
</tr>
<tr>
<td>teratogenicity</td>
<td>The likelihood that a drug will cause congenital abnormalities in the developing fetus.</td>
</tr>
<tr>
<td>therapeutic effect</td>
<td>The desired clinical action of a drug.</td>
</tr>
<tr>
<td>therapeutic index</td>
<td>A ratio that measures the safety and usefulness of a drug for an indication. The ratio describes the relationship between doses of a drug required to produce undesired and desired effects. The larger the therapeutic index, the safer the drug.</td>
</tr>
<tr>
<td>thromboembolism</td>
<td>The blocking of a blood vessel by a particle that has broken away from a blood clot at its site of formation.</td>
</tr>
<tr>
<td>thrombosis</td>
<td>The formation of a clot or thrombus inside a blood vessel, obstructing the flow of blood through the circulatory system.</td>
</tr>
<tr>
<td>titration</td>
<td>The administration of small incremental doses of a drug until a desired clinical effect is observed.</td>
</tr>
<tr>
<td>tolerance</td>
<td>The need for an increasingly larger dose to produce the same effects as the original dose.</td>
</tr>
<tr>
<td>toxicity reaction</td>
<td>Predictable, dose-related responses that occur with doses above the therapeutic range for a particular client. The severity of the reaction is usually dose-related.</td>
</tr>
<tr>
<td>use (of privacy information)</td>
<td>Employing personal information to carry out purposes identified by the health care provider or other purpose permitted under the appropriate privacy legislation.</td>
</tr>
<tr>
<td>xerostomia</td>
<td>Subjective feeling of oral dryness; occurs as a result of hypofunction of the salivary glands. Can manifest as a quantity change (reduced volume/flow), quality change (change in viscosity or natural defensive properties), or both.</td>
</tr>
<tr>
<td>zero-order kinetics</td>
<td>A constant amount of a drug is absorbed over a given time period. See also first-order kinetics, the opposing term.</td>
</tr>
</tbody>
</table>
Elements of Prescribing: A Pharmacy Refresher Course for Dental Hygienists has been developed by a team of experts and is designed to address the participants’ learning needs by building on the prior knowledge that registered dental hygienists have obtained in undergraduate education. An objective of the course is to ensure that participants acquire a standard level of knowledge regardless of educational background or years of experience.

The overriding goal of this self-study course is to ensure that dental hygienist prescribers provide safe, accurate prescriptions for the narrow subset of drugs used in dental hygiene practice as indicated in Section 13 of the Dental Hygienists Profession Regulation under the Health Professions Act (HPA).
To obtain a CRDHA prescriber’s identification (ID) number, you must successfully complete *Elements of Prescribing: A Pharmacy Refresher Course for Dental Hygienists*.

### Course Content

- **Introduction**
- **Module 1:** Professional Accountability, Communication, and Collaboration
- **Module 2:** Decision Making Related to Medication Use (includes obtaining and assessing a client’s Comprehensive Health History)
- **Module 3:** Principles of Pharmacology
- **Module 4:** Drugs Used in Dental Hygiene
- **Module 5:** Risk Management, Drug Errors, and Medical Emergencies
- **Module 6:** Issuing a Prescription
- **Module 7:** Storage, Disposal, and Labelling
- **Examination**

### Program Delivery

**Admission Requirements**

Admission is open to all CRDHA members in good standing on the General register.

**Application Process**

1. Complete the attached registration application. Additional copies of the application can be downloaded from the CRDHA website: www.crdha.ca.
2. Submit your completed application and non-refundable registration deposit of $50 (fifty dollars). This deposit will be applied to the full course fee when you are accepted into the course. In order for your application to be processed, CRDHA must receive both your complete application and your non-refundable deposit.
3. Once CRDHA receives your registration application and deposit, your name will be added to a list of CRDHA members requesting registration in the course. The initial intake will be limited to 40 (forty) registrants. Should more than 40 applications be received by the deadline, there will be a draw to determine the first intake.

4. You will receive written notification confirming acceptance in the first intake or placement on a waiting list for subsequent intakes.
5. If you are accepted, you will be required to pay the remainder of the course fee by the date specified on the acceptance letter.

*Please note: Applicants who submit completed applications by the deadline, but are not accepted for the first intake, will be given priority for the second or third intakes. Your deposit will be credited toward your course fee for the second or third intake.*

### Deadlines

- **Registration application received at CRDHA office:**
  - *June 14, 2008*, 4:00 pm  
  - *Deadline extended to June 20*
- **Written notification mailed from CRDHA to applicants:**
  - *July 4, 2008*
- **Projected course date:**
  - *July 14, 2008*

### Course Cost

**Total course fee:** $600.00 (includes course manual and the examination)

The $50.00 (fifty dollars) non-refundable registration deposit will be applied to the course fee. There will be no refunds once full course fee is received.

### Required Resources (textbook or electronic format)

Participant is responsible for the purchase of these resources.


* A discount from Lexi-Comp is available for participants. Details will be included in your course confirmation letter.

### Time Limit for Course Completion

6 months: a 3-month extension is available upon request.
The Learning Experience

Course Design
This self-study course is designed to be accessible to Alberta’s registered dental hygienists located throughout the province.

- You can work on the course individually at your own pace within the time limit for course completion.
- Learning activities accommodate a variety of learning styles.
- Regularly scheduled teleconferencing or web-conferencing sessions with resource people will be available during the day and evening.

Each course module:

- May direct you to other resources for review of fundamental concepts prior to proceeding with the module.
- Presents learning objectives, required readings, and key learning points.

Course Assignments
Course assignments reflect important learning outcomes and their application within the practice setting. Assignments include:

- Issuing prescriptions
- Analyzing and responding to a scenario
- Accessing current resources to research drug information
- Reporting adverse reactions

You must obtain a pass mark of 75% on each assignment to be eligible to write the examination.

Examination
A detailed Examination Handbook, outlining components of the examination development and administration, will be provided with the course material. You must obtain a pass mark of 80% on the examination.

The examination will be available at proctored locations throughout the province. You can choose to have the examination administered in either computer-based or print-based format.

Successful completion of the examination will allow the CRDHA General member to apply for a prescriber’s identification (ID) number. Further details on how to apply for a prescriber’s ID number will be provided upon successful completion of the examination.

Practice Tips
- Help you to apply the knowledge or skills in your practice setting.

Pause & Reflect
- Used to help make a connection between the course text and your current practice.

Scenarios
- Based on real situations that may occur.
- Learners must apply the new knowledge and use critical thinking to solve a problem.
- Four fictional “persona” profiles are used throughout the course to bring life to the situations.

Did You Know?
- Acts as a stop sign about something in the text.
- Used to draw special attention to a fact.
Why are there four required references?

In this course, you are expected to have up-to-date drug reference information. You will use all four required references throughout the course to complete assignments and activities. It is important that you have hands-on experience with a variety of resources, since it is not sufficient to rely on one resource for current drug information.

Many dental/dental hygiene practices have the required texts we have listed. These are often used by the staff for daily reference. You may choose not to purchase an additional copy if a specific reference is already available to you in your practice setting.

What kind of support can I expect while I am completing the course?

Experts will be available to answer your questions at regularly scheduled times throughout the six months. These sessions may be held via teleconferencing or web-conferencing. These scheduled times are offered in both the evening and daytime.

The CRDHA’s Pharmacy Course Administrator will also be available at regularly scheduled times to address your questions. Contact times for the Course Administrator will be provided to you at the initiation of your course.

What happens if I submit an assignment and get a grade lower than the set pass mark?

If you do not achieve the set pass mark on your first assignment, you must complete an alternate assignment that covers the same subject material. Feedback will be provided with the first assignment to help identify where you need to focus your learning. Prior to submitting the alternate assignment, you are strongly encouraged to participate in one of the regularly scheduled sessions with the resource people.

If you are unsuccessful in completing an assignment a second time, you may be directed to obtain further education (e.g., undergraduate course in the basics of pharmacology) prior to being allowed to continue with the course.

The assignments are designed to help you integrate the information you have learned in the modules. You are expected to work on the assignments individually. Completion of assignments throughout the course will help you assess your learning and determine areas which may need improvement prior to taking the examination.
How many program credits will I qualify for once I successfully complete this course?

The CRDHA Competence Committee has approved this course for 25 (twenty-five) program credits, which is the maximum credits allowed for any course.

What if I don't achieve the passing mark on the examination?

If you are unsuccessful in your first attempt at the examination, you can request to rewrite the examination. Course participants who fail the examination will be provided with information on rewriting application procedures. The request must occur within two months following the official notification of an unsuccessful initial attempt. The fee for each examination rewrite is $100.00.

Course participants have three attempts to pass the examination. A course participant who fails the second attempt will be required to provide satisfactory evidence that further education has been completed in the necessary areas prior to writing the third and final attempt.

A course participant who fails three consecutive attempts of the examination will be required to wait a minimum of 12 months to reapply to take the course. The applicant must meet the criteria in effect at the time of the new application. If readmitted, the applicant must successfully complete the entire course again — including all mandatory assignments.

Course participants who are unsuccessful can request a manual rescoring of their answer sheets. You can also request a formal review of your examination attempt if you believe you were treated unfairly or if there were any other irregularities in the examination process.

Frequently Asked Questions

When can I take the examination?

Once you have completed the course materials and obtained the required pass mark on all assignments, you can submit a request to take the examination. You will then be directed to contact the testing agency to schedule your examination at one of the proctored examination sites available in your area. The Examination Handbook will provide you with information about the personal identification required and the items you may take with you to the exam. Resources that you are allowed to use during the examination (e.g., Drug Information Handbook) will be sent directly to your exam site by the Course Administrator.

What happens after I've written the examination?

You will be informed of your official examination results by mail within four weeks of completion of your examination. The results will be reported as either pass or fail. If your score is greater than or equal to the pass mark, you will receive a “pass” result. If your score is less than the pass mark, you will receive a “fail” result.

How do I apply for a prescriber’s ID number?

Once you receive a “pass” result, you will be able to submit your application to obtain a prescriber’s ID number. After CRDHA has issued you a prescriber’s ID number, CRDHA will inform the Alberta College of Pharmacists (ACP).

You will have up to one year from the date that you successfully complete the examination to apply for your prescriber’s ID number (e.g., if you pass the examination June 30, 2008, your application for a prescriber’s ID number must be received by June 29, 2009). After that date, if no application is received, you must meet the criteria set by Council to obtain your prescriber’s ID number.
Instructions for Registration
• Your completed registration application accompanied with your $50.00 non-refundable deposit must be received at the CRDHA office prior to the registration deadline of June 14, 2008, 4:00 pm. Deadline extended to June 20
• Retain a copy of your completed application for your records.
• Your receipt for the non-refundable registration deposit will be issued by the CRDHA office.

☐ Register me for Elements of Prescribing: A Pharmacy Refresher Course for Dental Hygienists
☐ $50.00 (fifty dollar) non-refundable deposit is enclosed (cheque or money order payable to CRDHA)

CRDHA ID#: ____________________________
Last Name: ___________________________________  First Name: _______________________________________________
Mailing Address: _________________________________________________________________________________________
City/Town: _____________________________  Postal Code: ___________  Email: ____________________________________
Phone: Home (        ) _____-_______________   Bus. (        )  _____-______________   Cell. (        ) ______-_______________

My practice settings (choose all that apply):
☐ Community health
☐ Stand-alone dental hygiene practice
☐ Mobile dental hygiene practice
☐ Private dental practice
☐ Educational institution
☐ Other ____________________

My practice focus (choose all that apply):
☐ Clinical dental hygiene
☐ Educator
☐ Health promoter
☐ Researcher
☐ Consultant
☐ Professional speaker

My primary practice is in (select one only):
☐ Rural
☐ Urban

Declaration Statement
I, ____________________________________________________, certify to the best of my knowledge that the information provided on this form is complete and true, and knowing that it is of the same force and effect as if made under oath and by virtue of the “Canada Evidence Act”. I understand that making a false statement on this application could result in the rejection of the application. I understand that if my deposit cheque fails to clear through my bank, my application will be rejected.

Signature: _______________________________________________     Date: ____________________________

Mail registration application and cheque or money order payable to
College of Registered Dental Hygienists of Alberta
#206, 8657 51 Avenue NW, Edmonton, AB   T6E 6A8

CRDHA OFFICE USE ONLY
Cheque No. ______________ Date ______________ Amount ____________ Deposit Date _______________ Receipt # _____________
Personal/Corporate